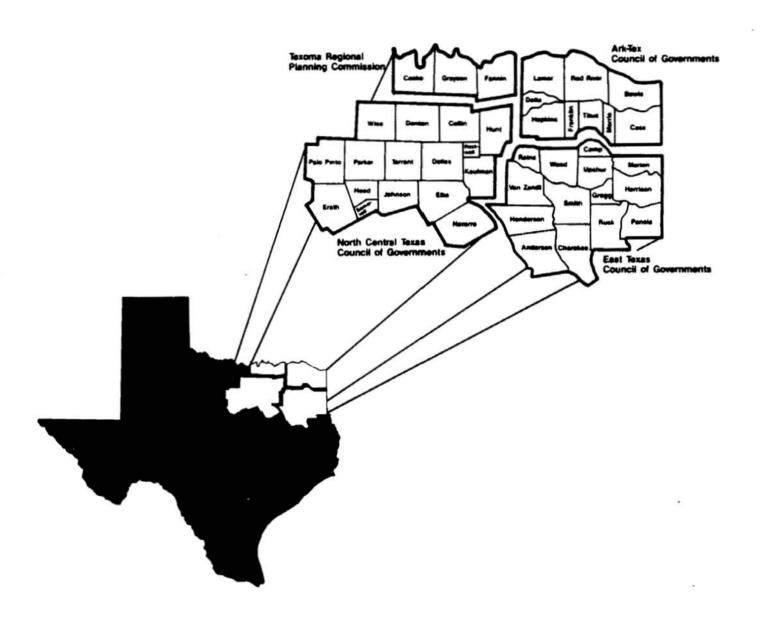
# PUBLIC SAFETY RADIO COMMUNICATIONS PLAN

## For Region 40

North Central and North East Texas



| Special thanks to the Texas Chapter of the Associated Public Safety Communications Officers Inc. for covering the majority of this plan's printing costs. |
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| Prepared by the North Central Texas Council of Governments December, 1990   |
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#### **ACKNOWLEDGMENT**

The **Public Safety Radio Communications Plan for Region 40** provides operations and system design requirements in response to Federal Communications Commission Report and Order 87-112. This Plan establishes the structure by which eligible agencies may request frequencies from the 821-824/866-869 MHz band. Written by the Regional Communications Planning Committee -Region 40, it represents almost 15 months of intensive effort by more than 50 of the most experienced public safety communications personnel in North Central and North East Texas. The efforts of many of the area's communications personnel three years before helped set the stage for this latest planning effort.

Several Committee members working on this Plan previously served on the National Public Safety Planning Advisory Committee (NPSPAC) to the FCC. Meetings in Washington D.C. and other locations in 1987, provided them the advantage of lengthy background discussions and gaining knowledge of how other jurisdictions approached the planning process. In addition, the Committee benefitted from early drafts of the other regions' plans under development at the same time. It is this spirit of cooperative sharing that other regions are cordially invited to appropriate any part of this document they may find useful.

Great appreciation is due members of the Regional Communications Planning Committee — Region 40 for their many hours of work on the Plan. I believe that the public safety community as a whole will appreciate their efforts for many years to come. I would also like to thank the staffs of the four regional planning councils making up Region 40: the North Central Texas Council of Governments, the Texoma Regional Planning Commission, the Ark—Tex Council of Governments, and the East Texas Council of Governments. They have provided a great deal of administrative and moral support throughout the entire planning process. Without their backing we could not have progressed nearly so well.

Charles O. Bowles, Chairman Regional Communications Planning Committee — Region 40 October 5, 1988

### **Program Scope**

#### **PROGRAM SCOPE**

#### INTRODUCTION

In December 1983, the United States Congress directed the Federal Communications Commission (FCC) to establish a plan to ensure that the communications needs of state and local public safety authorities would be met. By Notice of Inquiry, over 300 comments were evaluated by the FCC staff. This resulted in the recognition of public safety agency needs and the subsequent allocation of an additional 6 megahertz of spectrum for public safety use nationwide, The FCC also recognized the necessity of developing a National Plan to promote interoperability among public safety providers and to insure an efficient use of the newly allocated spectrum.

Recognizing the importance of public safety participation in the development of the National Plan, the FCC established the National Public Safety Planning Advisory Committee (NPSPAC). With open membership, NPSPAC provided the opportunity for the public safety community and other interested members of the public to participate in an overall spectrum management approach by recommending policy guidelines, technical standards, and procedures to satisfy public safety needs for the foreseeable future.

After consideration of NPSPAC's Final Report and comments filed in Docket No. 87-112, a Report and Order was released by the FCC in December 1987 which established a structure for the National Plan that consists of guidelines for the development of regional

plans.

The National Plan reflects the FCC's regulatory objective of maximizing spectrum efficiency and ensuring sufficient flexibility to accommodate specific communications requirements in different areas of the United States. The National Plan will serve as an umbrella under which regional plans can be developed and implemented.

The National Plan provides guidelines for the development of regional plans, with as much regional autonomy as possible, to ensure that the needs of all eligibles are considered in the planning process.

#### PURPOSE

Public safety spectrum users within the boundaries of Region 40 recognize that spectrum is a highly valued and limited resource which necessitates an orderly and efficient development of its use. Within Region 40, there are numerous governmental entities (both metropolitan and rural) which require new and/or additional communications capabilities in order to maintain a satisfactory level of public safety services for their citizens.

This Regional Plan was developed with the objective to assign frequencies in an equitable fashion to those public safety and special emergency radio service eligibles with the highest demonstrated need and that the frequencies would be assigned and used in the most efficient manner possible.

The purpose of this regional plan is to define, under the umbrella of the National Plan, specific users and their spectrum requirements, regional interoperability requirements, technical and frequency reuse requirements, and other requirements that may be applicable to Region 40 and adjacent regions. This plan provides flexibility to accommodate a wide variety of specific communications requirements which are needed for this region's public safety and special emergency service providers.

#### **REGIONAL PROFILE**

#### Geography

The 42 county area included in this Plan is shown by the map, "Public Safety Communications Planning Region - Region 40," on the following page. Region 40 typifies geographical diversity from its rich farmland in the northeast to fairly hilly semi-mountainous terrain in the West. Much of the Region's area is extensive from the standpoint of public safety officer coverage. There are times when only a few officers may be responsible for covering an area greater than 900 square miles. Appendix 1, "Region 40 - Square Miles By County," gives the square mile area for each county in the region. The total number of square miles in Region 40 is 31,193.

#### **Population - Current and Projected**

The 42 county region experienced significant growth during the late 1970's and early 1980's, but the oil price collapse of 1986 cast a shadow of economic uncertainty over the area. However, as noted in Appendix 2, "Prolected Population and Employment - Dallas/Fort Worth CMSA," and Appendix 3, "Population Totals and Projections By County Within Regional Council," the Region will continue to exhibit growth through the year 2000. Thirty-two (32) of 42 counties are projected to experience double digit percentage increases in population. The implications of this growth are that Region 40 will experience added service requirements requiring improved radio communications capabilities.

#### **Housing and Labor Market Trends (North Central Texas)**

The average household size declined from 3.1 in 1970 to 2.57 in 1986, and accompanying the smaller households has been a shift towards multifamily housing. In 1970, 77 percent of all households resided in a single family dwellings. By 1986, that proportion dropped to 65 percent, and is predicted to drop to 62 percent by 2010. This continues to be a relatively high percent of multifamily dwellers and the accompanying high densities of population will impact future police, fire, and emergency medical planning and services.

As a result of rapidly increasing labor force participation among women, population growth will not occur as rapidly as job growth. One implication of the two-earner

household is the increased potential for unstable family structures and resultant social consequences. For example, many children will be unsupervised and possibly more prone to commit criminal and mischievous acts. Also, more property is left unprotected because both adults may be away from home.

#### **Emergency Medical Services (North Central and Texoma Regions)**

Appendix 4, "Emergency Medical Services Information," depicts Emergency Medical Services manpower and selected capabilities. It is anticipated that the number of EMS personnel will increase approximately seven percent during the period 1986-1990. Given this increase the number of EMS services personnel will be 8353. This increase in personnel will result in a corresponding increase in the need for vehicles, supplies, and communications equipment to handle increased communications traffic.

#### **Law Enforcement Capabilities**

Appendix 5, "Number of Law Enforcement officers in North Central and Texoma Regions," reflects the number of sworn, non sworn, reserve, and )ail officers in selected jurisdictions as of 1986.

The number of law enforcement officers is expected to increase approximately ten percent a year during the period 1987 through 1989, resulting in a sworn manpower complement exceeding 8000 by the beginning of the next decade. The need for additional radio equipment and communications capabilities in the region is obvious and

existing systems are often less than adequate to assure reliable, prompt, and accurate communications. Local agencies are willing to examine technological advances in an attempt to remedy existing problems, but there will still be a need for additional frequencies if citizens are to be effectively served and officers protected.

#### **Index Crime (North Central Texas)**

Not unlike other parts of the country, communities in North Central Texas continue to experience an increase in criminal activity and a resulting increase in calls for services. As shown in Appendix 6, "North Central Texas Index Crimes Compared," the number of Index Crimes reported in the 16 county region has increased from 254,373 in 1983 to 386,681 in 1986 - an increase of 52 percent. The rate per I 00,000 population has increased 41 percent, from 7,382 in 1983 to 10,410 in 1986. The number of arrests for Index offenses has increased from 40,342 in 1983 to 52,062 in 1986, or a 29 percent increase. This compares to statewide increases of 33 percent for Index Crimes reported, 22 percent for the rate per 100,000 population, and 18 percent for arrests during the same period.

#### Fire Service Capabilities (North Central and Texoma Regions)

Fire service in the North Central and Texoma regions is characterized by a mix of full-time professional officers with a large number of professional volunteer personnel.

Appendix 7, "Fire Service Personnel by Jurisdiction," reflects the number of officers and civilian personnel available to respond to emergency calls for fire service. Not unlike the

law enforcement community, many of the fire departments cannot expand their communications capabilities to meet increasing demands for service. The opportunity to receive additional frequencies will help identify existing impacted frequencies and result in a more effective fire service operation.

#### PLANNING COMMITTEE FORMATION

The development of the Public Safety Radio Communications Plan for Region 40 has followed the requirements of the FCC's Report and Order as issued in the matter of General Docket 87-112.

Representatives of the Dallas/Fort Worth Metroplex Ad Hoc Committee and the North Central Texas Council of Governments (NCTCOG) Public Safety Communications

Advisory Committee served on the National Public Safety Planning Advisory Committee (NPSPAC) from its inception.

NCTCOG's Public Safety Communications Advisory Committee worked along with NPSPAC and began the cooperative regional planning process for the major population center of Region 40.

In accordance with the FCC's Report and Order 87-112, the Associated Public Safety Communications Officers, Inc. (APCO) recommended to the Commission the appointment of a "Convener" for Texas Region 40.

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Acting on a Petition for Limited Reconsideration, the Commission subsequently defined the limits of Region 40 as a 42 county area located in north central and northeast Texas (please see map on page 5). Planning responsibilities of NCTCOG's Public Safety Communications Advisory Committee were expanded to include the additional 26 counties of three adjacent regional councils (COGs). On April 12, 1988, the Region 40 convener issued a Public Notice that an initial Region 40 public safety communications planning meeting would be held June 14,1988, at the Administration Building at the Dallas/Fort Worth International Airport (please see Appendix 8). This initial regional planning meeting officially established the Region 40 planning committee. All official actions of the Committee, as reflected in the meeting minutes, are attached as Appendix 9.

### **Authority**

#### **AUTHORITY**

#### REGIONAL PLANNING COMMITTEE

Authority for the Regional Planning Committee to carry out its assigned tasks is derived from the Federal Communications Commission, Report and Order, Docket 87-112. Participants in the formation of the Regional Planning Committee represent interested parties from both the Public Safety and Special Emergency Radio Services. More than fifty (50) persons have directly participated in the plan development process. Appendix 10 contains the names, organizational affiliations, and mailing addresses of those who have been instrumental in the Regional Planning Committee's formation.

#### PLAN REVIEW

After compiling all written inputs to the Regional Plan, the Regional Planning Committee reviewed the completed draft in detail. Using the page by page review and explanation procedure by which NPSPAC approved its final report, the Regional Planning Committee approved the draft Plan. The draft was then submitted to the appointed conveners and/or planning committee chairmen of the seven adjacent regions for their review.

#### **CONFLICTS**

It is not the intent of this plan to conflict with any current or future rule or regulation of the National Plan as may be applicable by Report and Order of the Federal Communications Commission. In such cases where conflicts may exist, Federal Communications Commission rules and regulations shall prevail. Elements of this Plan not expressly prohibited by the FCC become applicable to this region upon the Plan's approval by the Commission. Should future determinations by the Commission void any individual element of this plan, all other elements will remain applicable.

This Plan is not intended to interfere with the work of organizations appointed by the Commission to provide frequency coordination recommendations to the Commission for eligibles covered by the Plan. Instead, it provides a structure by which spectrum conservation and efficiency can be maintained. Conflicts arising from differences between radio service coordinators and/or this Regional Plan shall be resolved by the Commission.

#### REGIONAL REVIEW COMMITTEE

Upon approval of this Plan by the Commission, a Regional Review Committee will be established for the review of new applications, for conducting an annual system implementation review, for making action recommendations to the Commission, for the resolution of inter-regional problems, for recommending modifications and amendments to the Plan, and for exercising general oversight of the Plan.

To ensure organizational integrity, the Regional Review Committee shall be attached to arid serve under the sponsorship of the four Regional Councils comprising Region 40. At a minimum, each Regional Council will be represented by two (2) members or by fifteen percent (15%) of the Committee's total membership - whichever is greater. Most Committee members will be employees of an official entity responsible, under Texas Statutes, for the preservation of life and property as a matter of public safety.

The Regional Planning Committee Chairman shall serve as chairman of this Committee. At the direction of the Regional Review Committee, the chairman shall forward Regional Plan modifications and amendments to the Commission for its action. The APCO frequency advisor responsible for Region 40 will serve as an ex-officio, nonvoting member of the Committee.

The Regional Review Committee shall establish rules and operating procedures as ft deems necessary.

### **Operational Requirements**

**OPERATIONAL REQUIREMENTS** 

REGIONAL INTEROPERABILTY (Common Channels)

In accordance with the national band plan for 806-809/851-854 MHz, interoperability

among federal, state, and local governments during both routine and disaster operations

will take place primarily on the five common channels as identified in the National Plan.

Additionally, through the use of S-160 or equivalent agreements, a licensee may permit

federal use of a non-federal communications system. Such use, other than the five

common channels, is to be in full compliance with the Commission's requirements for

government use of non-government frequencies (Title 47 CFR, Sec. 2.103). Licensees

are allowed to count as additional loading, a factor of two percent for federal

interoperability agreements. No channels other than the five national common channels

are needed to meet this region's interoperability requirement.

The implementation of the common channels designated by the National Plan will be

separated into two categories of users: primary and secondary.

Primary Users: (five or more channels)

As a minimum, all primary users shall operate a receiver for continuous monitoring of the

national calling channel and a separate mobile relay base station equipped to operate on

all five national common channels. All primary users shall maintain a radio watch on the

calling channel for the purpose of monitoring the channel and rendering assistance. All

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common channel equipment shall be equipped to provide an on-street mobile coverage capability of the same size and quality for which the station license was granted. All licensees are encouraged to operate additional base stations on any or all of the four remaining common channels.

Secondary Users: (four or less channels)

All secondary users shall, as a minimum, operate a base station for continuous monitoring of the national calling channel. All secondary users shall maintain a radio watch for the purpose of monitoring and rendering assistance on the calling channel. A secondary user whose area is encompassed by a primary user may apply for a waiver from the Regional Review Committee for full time monitoring of the national calling channel. The secondary user will be required to have a station on the national calling channel.

#### **CHANNEL USE**

Plain language will be used on all five common channels at all times, and the use of unfamiliar terms, phrases or codes will be kept to a minimum, unless deemed necessary for security purposes.

The use of these channels for Intra-system normal dispatch and routine agency operations is strictly prohibited.

Normally, the five common channels are to be used only for activities requiring communications between agencies not sharing any other compatible communication system. Under emergency situations, one or more tactical channels may be assigned by the controlling agency at the time of the incident.

Users of these channels include federal, state, and local disaster management agencies; police, fire, and providers of basic and advanced life support services. Other eligibles, such as school buses, volunteer emergency corps, Red Cross, Radio Amateur Civil Emergency Services (RACES), Amateur Radio Emergency Services (ARES), Salvation Army, etc. are eligible for use of these interoperability channels in support of the preservation of life and property during emergencies. Those eligibles may be called upon by a controlling agency for support when such eligibles are a part of a controlling agency's documented emergency plan.

The use of automatic or operator-assisted connection of these common channels to the switched telephone network is prohibited.

#### **CALLING CHANNELS**

The calling channel shall be used to contact other users in the region for the purpose of requesting incident related information and assistance. This channel shall not be used as an ongoing working channel. Once contact is made, an agreed upon tactical channel is recommended for continued communications.

TACTICAL CHANNELS (8TAC91 - 8TAC94)

These channels are reserved for use by those agencies in need of conducting interagency communications. Incidents requiring multi-agency participation will be coordinated over these channels by the agency controlling the incident. Individual tactical channels may be designated for use by various services or disciplines on an incident basis by the controlling agency. In the event of multiple incidents requiring the use of these channels, channels shall be designated by mutual agreement between controlling agencies. In no case shall control of these channels remain with any single agency beyond the termination of a declared emergency.

STATION REQUIREMENTS

All mobile and portable radios operating in the 806-809/851-854 MHz band shall be equipped to operate on the five common channels using CTCSS tone squelch of 156.7 Hz.

All mobile relay base stations operating on these common channels shall be equipped to operate using CTCSS tone squelch of 156.7 Hz. They shall be equipped to operate as a mobile relay station on demand, but shall normally operate in the repeat disable mode.

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### **Application Procedures**

#### **APPLICATION PROCEDURES**

Any request for frequencies to be used for public safety or special emergency operations (as described in part 90 of the FCC rules and regulations) must be submitted to the Regional Review Committee for approval.

If adequate spectrum is available, the Regional Review Committee shall review the application to determine its compliance with the regional plan as indicated below. If there is inadequate spectrum or the Committee anticipates a shortage, the established evaluation procedure shall be instituted. This procedure, "Evaluation Criteria," is outlined in Appendix 11.

If approved by the Regional Review Committee, the request for frequencies will be returned to the applicant to be forwarded to the Associated Public Safety

Communications Officers, Inc. (APCO) for frequency coordination. If not approved by the Regional Review Committee, the request will be returned to the applicant for revision and correction before being resubmitted to the Committee for further consideration.

The request shall contain information to justify the frequencies requested and shall demonstrate compliance with the regional plan. As a minimum, this request shall consist of the following:

- 1. Appropriate Coordination and Licensing Application Forms
- 2. System Design Information
- 3. Funding Statement
- 4. Proposed Implementation Schedule

5. Existing Frequency Statement

### **Evaluation Procedures**

#### **EVALUATION PROCEDURES**

The Regional Review Committee will review and evaluate each request based on the sufficiency of the information contained in the five sections listed earlier. The information required in each section includes the following:

#### System Design

A brief statement of the intended use of requested frequencies and how they will be integrated into existing emergency and non-emergency operations will be required. The efficiency of 800 MHz frequencies depends greatly upon the design and programming of the system itself. To assist all public safety users in making all systems operate in an efficient manner is the reason this area is being included for review. Specific criteria regarding system parameters are defined in the section, "System Technical Design Requirements."

#### Funding Statement

The applicant's commitment to implement the system must be ensured to maintain the efficient utilization of these 800 MHz frequencies. The funding statement, which will be a resolution from the applicant's governing body, will include the method by which the system will be funded; for example, by Certificates of Obligation or local bond funds.

#### Implementation Schedule

All applications for spectrum will be considered "slow growth" as in Part 90:62e of the FCC Rules and Regulations. The applicant will be requested to furnish a schedule detailing the time period required to implement the proposed communication system, from funding through turn-on and final acceptance.

#### **Existing Frequency Statement**

It is anticipated that, in all but the most unusual cases, frequencies presently utilized by a licensee will be released for reassignment to other agencies within the FCC designated radio services, e.g., fire, local government, forestry, etc. The applicant is required to furnish the Regional Review Committee a list of frequencies to be released as "give-backs."

The FCC authorized frequency coordinators will be notified of any recommended reassignment of give-back frequencies. The applicant evaluation criteria established in this Regional Plan are to be considered for recommendation purposes. In such cases where specific channels are required by numerous applicants, the user prioritization by service and function, as outlined in this Plan, will be utilized for making the recommendation. In all cases, area of coverage criteria and channel loading criteria as covered in this Regional Plan will be applied. All give-back frequencies are to be considered for reassignment by the Regional Review Committee. An agency will not be

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able to "farm down" frequencies to other services within its political structure unless it is justified to the Regional Review Committee. Agencies failing to give back channels, as agreed, will be subject to forfeiture of their 806-809/851-854 MHz channels. For example, if an agency applies for a five channel trunked system to replace existing UHF channels, the agency's expressed intent is to give back its UHF channels after a reasonable implementation and testing time of its trunked system. Should the agency decide not to give back its UHF channels, and not be able to justify the decision to the Regional Review Committee, the Committee may recommend to the FCC that all or part of the requested new frequencies be withdrawn.

### **Technical Design**

## **Requirements**

#### **TECHNICAL DESIGN REQUIREMENTS**

COVERAGE LIMITATION - Antenna Height and Power

System coverage or service area is limited to geographical boundaries in order to maintain maximum frequency reuse within the region. Agencies requesting new or additional channels will have their proposed system design evaluated by the Regional Review Committee. Any agency requesting a transmitter location not centrally located within its jurisdiction must include in the request adequate justification for such placement. If a non-centrally located transmitter may result in significant encroachment on surrounding jurisdictions, a directional antenna must be chosen which will minimize this encroachment.

Agencies with service areas outside their political boundaries may request extended system coverage. Such requests for extended coverage must be accompanied by written justification.

Extended coverage systems will not be authorized unless approved by the Regional Review Committee. Favorable consideration will be given to those extended coverage systems which are made available for use by eligibles other than the licensee.

**DEFINITION OF SERVICE AREA** 

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"System Coverage" or "Service Area" is defined as the boundary where received signal strength falls to 41 d8u.

Forty-one (41) dBu was selected by combining factors, such as receiver sensitivity for 20 dB quieting, foliage attenuation, Rayleigh fading (98 percent probability), and portable body loss.

### **CALCULATION OF SERVICE AREA**

Three factors must be known to determine service area; (1) the strength of the received signal, i.e., "received signal strength," (2) antenna height above average terrain (HAAT), and (3) the effective radiated power (ERP). Received signal strength has been defined, leaving two factors that can be modified to achieve the desired coverage. Tabulated data from Carey propagation curves in Appendix 12 will be used to give the distances to the 41 dBu boundary based on HAAT and ERP. This distance is considered the radius of coverage from the transmitting site. A step-by-step procedure is provided in Appendix 13.

It will be permissible for agencies requesting system authorization to determine the distance to the 41 dBu boundary on a radial-by-radial basis, with a minimum of eight equally spaced radials at 45 degree intervals, beginning at true north, and plot the service area boundary based on these points. This plot may be submitted with the request for frequencies to show that service areas outside the agencies' political jurisdictions are being kept to a minimum. In any case, a minimum antenna height of 100 feet above ground elevation will be necessary to provide clearance with roof lines

and treetops. Any agency with its transmitter centrally located will be allowed a minimum service area radius of eight (8) miles - regardless of the size of its jurisdiction - as long as interference protection for existing co-channel and adjacent channel systems is sufficient.

### **RESPONSIBILITY FOR CALCULATIONS**

It will be the responsibility of the requesting agency to calculate the proposed service area and to validate the accuracy of the calculation. However, the Regional Review Committee may provide assistance at no cost to any agency requesting help in determining its service area. This assistance will be available for a period of five (5) years after approval of the Regional Plan by the FCC.

This assistance will be limited to the numerical calculations associated with the look-up tables. It is the requesting agency's responsibility to provide accurate system parameters and procure "height above average terrain" radials as specified in 90.309(a)(4) of the Commission's rules.

### PROPOSED SERVICE AREA EXHIBIT

An agency shall provide, along with its request for frequencies, an exhibit showing the calculated service area and the agency's jurisdictional boundaries. The boundaries must be drawn to scale on a 1:250,000 USGS map with a title block including the name of the requesting agency, height above average terrain, effective radiated power.

latitude, longitude, ground elevation of the transmitting site, and the distance to the service area boundary in miles, as calculated. An example is included in Appendix 14 of this Plan.

**CONTROL STATION** (Limit on Effective Radiated Power)

Control stations will be limited to an effective radiated power of no more than 6 dB above that of a mobile unit associated with the system. A list of control station locations) including latitude, longitude, effective radiated power, and height of antenna above ground level shall be provided with the request for frequencies.

### FREQUENCY REUSE

Careful adherence to the system technical design requirements of this Plan will allow for maximum co-channel usage within this region. Because of the close proximity of adjacent channel frequencies, adjacent channel considerations must be planned similar to that of co-channel design.

Agencies requesting frequencies that have been previously licensed within this region or an adjacent region must show that their proposed system will operate on an interference-free basis with any existing co-channel system. Requesting agencies must demonstrate that the proposed system will provide an existing to proposed signal margin

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of at least 35 dB at the service area boundary of the existing system.

The signal strength of the proposed system is to be calculated by the same method as outlined in "Calculation of Service Area" elsewhere in this Plan. After the distance from the proposed transmitter site to the existing service area contour is determined, the received signal strength of the proposed system can be found in the look-up tables using antenna height, effective radiated power, and distance. If it is determined that the margin of protection is insufficient, the proposed system must be modified to meet the protection criteria. A step-by-step procedure for performing the series of interference calculations is included in Appendix 15.

### **Adjacent Channel Design**

Proposed systems must also be designed for interference-free operation with adjacent channel licensees. The method of determination is identical to that of co-channel design as detailed in 'Co-channel Design," elsewhere in this Plan, with the exception of the existing to proposed signal margin criteria. In the case of adjacent channel systems, this margin will be reduced to 15 dB. All other calculations will remain the same.

It should be noted that the FCC has adopted technical standards for transmitters which will reduce adjacent channel interference and permit closer geographical adjacent channel use. However, the Commission has not adopted improved receiver technical standards. It is the position of the Commission that receivers do not cause interference.

nor do they threaten effective operation of the public safety network, as would substandard transmitters.

Because of the demand for limited spectrum, it is the intent of this Plan to provide efficient spectrum utilization within current technological capabilities. Agencies are encouraged to carefully consider the receiver selectivity specifications of any equipment to be purchased for use in the 806-809/851-854 band.

### **Absolute Mileage Separation**

In any case where the service areas of adjacent or co-channel systems are separated by at least 50 miles, the interference studies as set forth in this Plan are unnecessary because of free space and terrain losses.

### TRUNKING REQUIREMENT

As referenced in the national element, trunking is mandated for any new system with more than four channels in the 800 MHz band when located at a single transmitting site. Requests for exceptions will be considered by the Regional Review Committee for mobile data use, encryption, and telemetry stations. Other requests for waiver of the trunking requirement will be considered after presentation of evidence by the requesting

agency. Approval to waive the trunking requirement will be based on the individual merits of the presentation.

### SYSTEM LOADING AND IMPLEMENTATION REQUIREMENT

Agencies utilizing frequencies in the 806-809/851-854 MHz band shall comply with loading requirements as called for in Part 90.631 of the Commission's Rules and Regulations for trunked radio systems, and in Part 90.633 of the Commission's Rules and Regulations for conventional systems. As referenced in 90.631 and 90.633, Part 90.629, shall also apply.

### **Traffic Loading Study**

Justification for adding frequencies, or retaining existing frequencies in the 806-809/851-854 MHZ band, can be provided by a traffic loading study in lieu of loading by number of transmitters per channel. It will be the responsibility of the requesting agency to provide a verifiable study showing sufficient airtime usage to merit additional frequencies. A showing of airtime usage, excluding telephone interconnect air time, during the peak busy hour greater than 70 percent per channel on three consecutive days will be required to justify additional or retain existing frequencies.

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### SYSTEM ENGINEERING REQUIREMENTS

### **System Engineering Exhibit**

All requests to the Regional Review Committee for additional frequencies must include sufficient data for the Committee to be able to determine proposed system operating parameters.

The system engineering exhibit must show:

- 1. Transmit Output Power
- 2. Type of Cavities (duplexers and combiners) and Associated Losses
- 3. Type of Transmission Line and Associated Loss (including jumpers)
- 4. Antenna Model and Gain
- 5. Ground Elevation Above Mean Sea Level
- 6. Antenna Centerline AGL
- 7. Height Above Average Terrain of Antenna Centerline
- 8. Effective Radiated Power as Determined by items 1 through 4.

A proposed format for this exhibit is Appendix 16.

### Average Elevation Exhibit

An additional exhibit showing the average elevation of the terrain of each of the eight main radials will be required. If an outside source is used for the calculation of average terrain, a copy of this report can be substituted for the average elevation exhibit.

#### CELLULAR TELEPHONE USE

The use of a car radio telephone via interconnect through an 800 MHz trunked radio system or other two-way radio communications system will normally require a significant amount of air time. Therefore, telephone interconnect is discouraged. The use of a

defeatable interconnect for radio telephone use is allowed for systems implemented under this Regional Plan. The use of cellular telephones for automatic interconnect to the Public Switched Telephone Network is recommended.

# **Initial Frequency**

## **Assignment**

#### **INITIAL FREQUENCY ASSIGNMENT**

### **METHODOLOGY**

Frequencies have been initially assigned on a county-by-county basis. It should be noted that 78 percent of Region 40's population is located in the Dallas-Fort Worth Metroplex area and as such this area has the greatest need for frequencies within the Region. Using this area as the start point for making initial frequency assignments the number of frequencies allocated to each county has been correlated to population with a minimum of 2 frequencies per county and an additional frequency for each 25,000 population above 50,000.

Geographic coordinates of the center point of each of the forty-two (42) counties were determined along with a radius, in miles, of a circle encompassing the majority of the area of the county, but extending less than three miles past the county boundary.

A computer model based on the Okumura Propogation Model combined the above information with a desired received signal strength of 40 dBu to generate a distribution of the most desirable frequencies by county.

Although the Carey propagation model is called for in the part of this Plan pertaining to frequency reuse and height/power limitations, it did not exist in the form of a computer program that would allow the massive numerical calculations necessary to assign all the frequencies in the 806-809/851-854 MHz allocation over the entire Region 40 in an acceptable period of time. Predictions of the two models were compared for an area the

size of a typical Region 40 county.

The results so closely coincide that for the purpose of frequency distribution, distinguishing between the two models is unnecessary.

This distribution is made to spread the spectrum in an efficient manner regionwide, allowing for future population growth in counties outside Collin, Dallas, Denton, and Tarrant Counties (the Metroplex area), and to provide 20 channels for statewide systems which is a need identified by the State of Texas. Initial frequency assignments are included in Appendix 17, 'Initial Frequency Assignments - Region 40." "Statewide systems" is defined as a system capable of serving throughout the state in those regions having approved radio communications plans. The 20 channels are not necessarily intended for use by state agencies only.

Frequencies shown in the appendix as "to be assigned in accordance with the regional reuse protection criteria" are not assigned in the region to protect assigned adjacent channel users. These frequencies will be assigned in accordance with the Plan's reuse criteria upon depletion of county frequency pools. This will allow maximum reuse with proper protection as exact transmitter locations and service areas become known.

The Regional Planning Committee has established an initial cutoff date of November 1, 1988, to review applications in accordance with criteria established by this Plan for the purpose of assigning frequencies from the appropriate county frequency pools.

### Region 40 800 MHz Plan / Central and North East Texas

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It should be noted that in order to provide maximum frequency reuse of all allocated channels, the Regional Planning Committee has detailed as a part of this Plan, reasonable co-channel and adjacent channel protection criteria that maximize frequency reuse throughout the Region. The Regional Planning Committee's desire to conserve spectrum prompted the initial distribution via county frequency pools as a starting point for efficient frequency assignments.

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Law enforcement use of aircraft, both local and statewide, is prevalent within Region 40. It is therefore necessary, as a part of this Plan, to restrict aircraft use of the 806-809/851-854 spectrum to the designated five interoperability channels.

# Use of Long Range **Communications**

#### **USE OF LONG-RANGE COMMUNICATIONS**

In a major emergency, where public safety entities might need long-range communications in and out of a disaster area, alternate radio communications plans are to be addressed by primary agencies within Region 40. These agencies shall include the appropriate interface to the five national channels as a minimum. Such long distance radio communications might be amateur radio operations, satellite communications and/or long-range emergency preparedness communications systems. Any or all of these systems should be incorporated in the communications plans of those primary agencies. These agencies could then communicate outside the disaster area for themselves and the smaller agencies which might need assistance. Incidents addressed in the National Public Safety Planning Advisory Committee's Plan such as earthquakes, hurricanes, floods, widespread forest fires or nuclear reactor problems could be a cause for such long-range communications needs.

# Appendices

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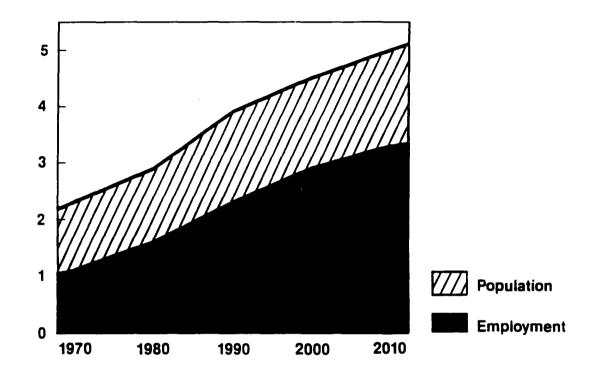
# REGION 40 SQUARE MILES BY COUNTY

| COUNTY   | SQ. MILES  | COUNTY SQ. MILES  |
|--|--|---|
| ARK-TEX COG  |  | NORTH CENTRAL TEXAS COG   |
| BOWIE CASS DELTA FRANKLIN HOPKINS LAMAR MORRIS RED RIVER TITUS TOTAL | 891<br>937<br>278<br>294<br>789<br>919<br>256<br>1,054<br>412<br>5,830 | COLLIN 886 DALLAS 907 DENTON 952 ELLIS 1,083 ERATH 952 HOOD 426 HUNT 910 JOHNSON 734 KAUFMAN 814 NAVARRO 1,086 PALO PINTO 986 |
| EAST TEXAS COG   |  | PARKER 906 ROCKWALL 149 SOMERVELL 192   |
| ANDERSON<br>CAMP<br>CHEROKEE<br>GREGG<br>HARRISON                    | 1,077<br>203<br>1,052<br>273<br>908                                    | TARRANT 899 WISE 923 TOTAL 12,805   |
| HENDERSON<br>Marion<br>Panola  | 888<br>385<br>812  | TEXOMA RPC  COOKE 893 FANNIN 895  |
| RAINS<br>RUSK<br>SMITH<br>UPSHUR                                     | 243<br>932<br>932<br>587   | GRAYSON 934<br>TOTAL 2,722  |
| VAN ZANDT<br>WOOD<br>TOTAL   | 855<br>689<br>9,836  | REGION 40 TOTAL 31,193  |

50 VIII į | ...**3** . • • •

"PROJECTED POPULATION AND EMPLOYMENT DALLAS-FORT WORTH CMSA"

(in millions)



SOURCE: NCTCOG Population and Employment Forecasts 1990-2010

### POPULATION TOTALS AND PROJECTIONS BY COUNTY WITHIN REGIONAL COUNCIL

### ARK-TEX COUNCIL OF GOVERNMENTS

| <del></del> | POPUL   | ATION   | %        |  |
|-------------|---------|---------|----------|--|
| COUNTY      | 1985    | 2000    | INCREASE |  |
| BOWIE       | 80,497  | 88,053  | 9.4%     |  |
| CASS        | 30,568  | 34,420  | 12.6%    |  |
| DELTA       | 4,825   | 4,970   | 3.0%     |  |
| FRANKLIN    | 7,247   | 8,348   | 15.2%    |  |
| HOPKINS     | 28,705  | 33,980  | 18.4%    |  |
| LAMAR       | 44,730  | 50,553  | 13.0%    |  |
| MORRIS      | 14,705  | 17,231  | 17.2%    |  |
| RED RIVER   | 15,514  | 15,480  | -0.2%    |  |
| TITUS       | 23,023  | 28,886  | 25.5%    |  |
| TOTAL       | 249,814 | 281,921 | 12.9%    |  |

SOURCE: U.S. Census

Texas Department of Health

EAST TEXAS COUNCIL OF GOVERNMENTS

|                  | POPL    | ULATION   | . %      |  |
|------------------|---------|-----------|----------|--|
| COUNTY           | 1986    | 2000      | INCREASE |  |
| ANDERSON         | 49,270  | 84,286    | 71.1%    |  |
| CAMP             | 10,477  | 13,483    | 28.7%    |  |
| CHEROKEE         | 41,683  | 53,395    | 28.1%    |  |
| GREGG            | 117,872 | 178,023   | 51.0%    |  |
| HARRISON         | 59,821  | 78,380    | 31.0%    |  |
| <b>HENDERSON</b> | 55,684  | 111,837   | 100.8%   |  |
| MARION           | 11,684  | 15,715    | 34.5%    |  |
| PANOLA           | 25,322  | 39,186    | 54.8%    |  |
| RAINS            | 5,883   | 8,967     | 52.4%    |  |
| RUSK             | 46,089  | 61,129    | 32.6%    |  |
| SMITH            | 152,983 | 234,285   | 53.1%    |  |
| UPSHUR           | 36,454  | 61,204    | 67.9%    |  |
| VAN ZANDT        | 38,412  | 64,347    | 67.5%    |  |
| WOOD             | 29,356  | 45,054    | 53.5%    |  |
| TOTAL            | 680,990 | 1,049,291 | 54.1%    |  |

SOURCE: U.S. Census ETCOG Population Estimates

APPENDIX 3 (continued)

NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS

|            | P0 PUL    | ATION     | %        |  |  |
|------------|-----------|-----------|----------|--|--|
| COUNTY     | 1987      | 2000      | INCREASE |  |  |
| COLLIN     | 228,533   | 358,000   | 56.7%    |  |  |
| DALLAS     | 1,781,475 | 2,013,000 | 13.0%    |  |  |
| DENTON     | 239,543   | 362,000   | 51.1%    |  |  |
| ELLIS      | 75,296    | 85,000    | 12.9%    |  |  |
| ERATH      | 28,725    | 30,000    | 4.4%     |  |  |
| HOOD       | 29,049    | 52,000    | 79.0%    |  |  |
| HUNT       | 67,414    | 76,000    | 12.7%    |  |  |
| JOHNSON    | 90,458    | 103,000   | 13.9%    |  |  |
| KAUFMAN    | 51,361    | 59,000    | 14.9%    |  |  |
| NA VARRO   | 41,765    | 44,000    | 5.4%     |  |  |
| PALO PINTO | 29,232    | 31,000    | 6.1%     |  |  |
| PARKER     | 58,957    | 67,000    | 13.6%    |  |  |
| ROCKWALL   | 22,491    | 32,000    | 42.3%    |  |  |
| SOMERVELL  | 5,876     | 6,000     | 2.1%     |  |  |
| TARRANT    | 1,105,723 | 1,450,000 | 31.1%    |  |  |
| WISE       | 31,814    | 39,000    | 22.6%    |  |  |
| TOTAL      | 2 007 710 |           |          |  |  |
| TOTAL      | 3,887,712 | 4,807,000 | 23.7%    |  |  |

SOURCE: NCTCOG Population Estimates

### TEXOMA REGIONAL PLANNING COMMISSION

| COUNTY                     |                            | ATION                       | %                      |          |  |
|----------------------------|----------------------------|-----------------------------|------------------------|----------|--|
| COUNTY                     | 1986                       | 2000                        | INCREASE               | <u> </u> |  |
| COOKE<br>FANNIN<br>GRAYSON | 29,600<br>24,800<br>98,300 | 34,200<br>26,200<br>108,100 | 15.6%<br>5.6%<br>10.0% |          |  |
| TOTAL                      | 152,700                    | 168,500                     | 10.4%                  |          |  |

SOURCE: Texoma Regional Planning Commission

APPENDIX 4

EMERGENCY MEDICAL SERVICES INFORMATION

| COUNTIES   | # of<br>Ambu-<br>lance<br>Firms | # of<br>Ambu-<br>lances | # of<br>ECA's | # of<br>EMT's | # of<br>EMT/SS's | # of<br>Paramedics | TOTAL<br>PERSONNEL |
|------------|---------------------------------|-------------------------|---------------|---------------|------------------|--------------------|--------------------|
| (NCTCOG)   |                                 |                         |               |               | İ                |                    |                    |
| COLLIN     | 14                              | 22                      | 81            | 308           | 6                | 65                 | 460                |
| DALLAS     | 43                              | 169                     | 424           | 1,138         | 5                | 1,008              | 2,575              |
| DENTON     | 17                              | 26                      | 209           | 350           | 14               | 83                 | 656                |
| ELLIS      | 11                              | 23                      | 67            | 162           | 3                | 36                 | 268                |
| ERATH      | 3                               | 6                       | 28            | 63            | 1                | 0                  | 92                 |
| HOOD       | 4                               | 6                       | 19            | 40            | 1                | 7                  | 67                 |
| HUNT       | 9                               | 10                      | 30            | 58            | 2                | 22                 | 112                |
| JOHNSON    | 10                              | 9                       | 66            | 116           | 20               | 11                 | 213                |
| KAUFMAN    | 2                               | 7                       | 16            | 63            | 2                | 17                 | 98                 |
| NA VARRO   | 7                               | 6                       | 30            | 66            | 4                | 3                  | 103                |
| PALO PINTO | 6                               | 8                       | 24            | 103           | 6                | 6                  | 139                |
| PARKER     | 3                               | 6                       | 16            | 74            | 3                | 10                 | 103                |
| ROCKWALL   | 2                               | 0                       | 3             | 4             | 0                | 7                  | 14                 |
| SOMERVELL  | 2                               | 4                       | 25            | 17            | 1                | 0                  | 43                 |
| TARRANT    | 46                              | 127                     | 258           | 1,918         | 28               | 393                | 2,597              |
| WISE       | 4                               | 5                       | 60            | 28            | 0                | 7                  | 95                 |
| (TEXOMA)   |                                 |                         |               |               |                  |                    |                    |
| COOKE      | N/AV                            | 3                       | 0             | 0             | 3                | 12                 | 15                 |
| FANNIN     | N/AV                            | 6                       | 14            | 11            | 7                | 2                  | 34                 |
| GRAYSON    | N/AV                            | 21                      | 7             | 59            | 8                | 51                 | 125                |
| TOTAL      | 183                             | 464                     | 1,377         | 4,578         | 114              | 1,740              | 7,809              |

SOURCE: Texas Department of Health (1986 Data)

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### NUMBER OF LAW ENFORCEMENT OFFICERS IN NORTH CENTRAL AND TEXOMA REGIONS

| ORGANIZATION #  | SWORN                | # NONSWORN       | # RESERVE                       | # JAILERS |
|---|----------------------|------------------|---------------------------------|-----------|
| (NCTCOG)  |                      |                  |                                 |           |
| Hutchins Police Department<br>Arlington Police Department | 9<br>380             | 0<br>130         | 6<br>15                         | 0<br>20   |
| Irving Police Department                                  | 205                  | 75               | 50                              | 10        |
| Lakeside Police Department                                | 1                    | 1                | 8                               | 0         |
| Blue Mound Police Department                              | 5                    | 3<br>2<br>0      | 8<br>2<br>5<br>4<br>2<br>2<br>8 | 0         |
| Maypearl Police Department                                | 1                    | 2                | 2                               | 0         |
| Aubrey Police Department                                  | 2<br>5<br>2          |                  | 5                               | 0         |
| Rio Vista Police Department                               | 5                    | 0                | 4                               | 0         |
| Murphy Police Department                                  | 2                    | 0                | 2                               | 0         |
| Runaway Police Department                                 | 2                    | 0                | 2                               | 0<br>0    |
| Wilmer Police Department                                  | 8                    | 4                | 10                              | 0         |
| Springtown Police Department<br>Red Oak Police Department | 4<br>6               | <b>4</b><br>5    | 5                               | 0         |
| Princeton Police Department                               | 4                    | 1                | 0                               | Ö         |
| Saginaw Police Department                                 | 14                   | 5<br>1<br>2<br>1 | 10                              | Ö         |
| Everman Police Department                                 | 14                   | ī                | 5                               | Ö         |
| North Texas State University                              | 20                   | <b>53</b> °      | Ö                               | Ō         |
| Greenville Police Department                              | 36                   | 4                | 1                               | 0         |
| Granbury Police Department                                | 13                   | 0                | 0                               | 0         |
| Sachse Police Department                                  | 8                    | 2                | 7                               | 0         |
| Commerce Police Department                                | 12                   | 5                | 8                               | 0         |
| Corsicana Police Department                               | 34                   | 10               | 9                               | 0         |
| Roc' wall Police Department                               | 17                   | 0                | 0                               | 0         |
| Bowie Police Department                                   | 10                   | 6                | 0<br>3<br>0                     | Ō         |
| Joshua Police Department                                  | 6                    | 0                |                                 | 0         |
| Lake Dallas Police Department                             | 9                    | 6                | 9                               | 0         |
| Cleburne Police Department                                | 36                   | 13               | . 0                             | 0         |
| Balch Springs Police Department                           | 25                   | 3                | 0                               | 0         |
| Weatherford Police Department                             | 27                   | 16               | 0                               | 0         |
| Mansfield Police Department                               | 22                   | 3<br>2           | 1                               | 0         |
| Keller Police Department Allen Police Department          | 17<br>24             | 11               | 2                               | 0         |
| Watauga Department of Public Safety                       | 2 <del>4</del><br>28 | 9                | 5                               | 0         |
| Cedar Hill Police Department                              | 23                   | 12               | 12                              | ŏ         |
| Euless Police Department                                  | 55                   | 25               | 0                               | Ŏ         |
| Burleson Police Department                                | 27                   | 9                | Ŏ                               | 0         |
| University Park Police Department                         | 32                   | 8                | 6                               | 0         |
| Duncanville Police Department                             | 47                   | 7                | 0                               | 41        |
| Lewisville Police Department                              | 81                   | 14               | 12                              | 0         |
| Fort Worth Police Department                              | 951                  | 298              | 87                              | 0         |
| Hurst Police Department                                   | 55                   | 27               | 6                               | 5         |
| Denton Police Department                                  | 87                   | 15               | 20                              | 0         |
| Grand Prairie Police Department                           | 127                  | 63               | 50                              | 9         |
| Highland Park D.P.S.                                      | 48                   | 8                | 0                               | 0         |
| N. Richland Hills Police Department                       | 63                   | - 22             | 0                               | 1         |
| Plano Police Department                                   | 156                  | 80               | 0                               | 7         |
| Garland Police Department                                 | 190                  | 61               | 0                               | 8         |

Appendix 5 (continued)

| ORGANIZATION   | # SWORN   | # NONSWORN   | # RESERVE       | # JAILERS       |
|--|---|--|-----------------|-----------------|
| (NCTCOG)   |   |  |                 |                 |
| Mesquite Police Department<br>Dallas Police Department<br>Dallas County Sheriff's Office   | 140<br>2,300<br>426   | 36<br>0<br>305   | 0<br>0<br>147   | 5<br>0<br>566   |
| (TE XOMA)  |   |  |                 |                 |
| Sherman Police Department Denison Police Department Gainesville Police Department Bonham Police Department Lindsay Police Department Cooke County Sheriff's Department Fannin County Sheriff's Department Grayson County Sheriff's Department Muenster Police Department Muenster Police Department Bailey Bells Police Department Callisburg Collinsville Police Department Dodd City Dorchester Ector Police Department Gunter Police Department Honey Grove Police Department Honey Grove Police Department Leonard Police Department Leonard Police Department Sadler Savoy Police Department Southmayd Tioga Police Department Tom Bean Police Department Trenton Police Department Van Alstyne Police Department | 50<br>41<br>31<br>14<br>1<br>14<br>9<br>53<br>1<br>3<br>- 2<br>- 1<br>1<br>4<br>5<br>2<br>1<br>- 3<br>- 1<br>- 2<br>1<br>1<br>4<br>4<br>5<br>2<br>1<br>1<br>4 | 17<br>9<br>-<br>5<br>-<br>10<br>6<br>15<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- | 19 - 9 - 8 5 25 |                 |
| Whitesboro Police Department Whitewright Police Department Windom  | 3   | -<br>-<br>-  |                 | -<br>-<br>-     |
| Oakridge<br>TOTAL  | 6 060   | 1 424  | <b>-</b><br>607 | <b>-</b><br>672 |
| IUIAL  | 6,069   | 1,424  | OU /            | 0/2             |

SOURCE: NCTCOG Survey of Local Departments and Texoma Regional Planning Commission

### APPENDIX 6

# NORTH CENTRAL TEXAS/STATE COMPARISON OF 1983 AND 1986 INDEX CRIMES, RATE/100,000, AND ARRESTS

|              | 1983    |         | 1986     |           | Percent Increase |       |
|--------------|---------|---------|----------|-----------|------------------|-------|
|              | NCTNCT  | State   | NCT      | State     | NCT              | State |
| Index Crime  | 254,373 | 928,803 | 386,681  | 1,235,505 | 52%              | 33%   |
| Rate/100,000 | 7,382.2 | 6,079   | 10,410.6 | 7,406     | 41%              | 22%   |
| Arrests      | 40,342  | 163,939 | 52,082   | 194,099   | 29%              | 18%   |
|              |         |         |          |           |                  |       |

SOURCE: Texas Department of Public Safety

## FIRE SERVICE PERSONNEL BY JURISDICTION

| Agency   | Paid Fire-<br>fighters | Paid<br>Officers                | Volunteer<br>Firefighters | Volunteer<br>Officers | Total     |
|--|------------------------|---------------------------------|---------------------------|-----------------------|-----------|
| (NCTCOG)   |                        |                                 |                           |                       |           |
| Dallas Fire Department                             | •                      | •                               |                           |                       | 1,760**   |
| Bell Helicopter-Textron                            | 19                     | 2                               | •                         |                       | 21        |
| Hurst Fire Department                              | 10                     | 26                              | 7                         | 29                    | 36<br>47  |
| The Colony Fire Department Coppell Fire Department | 9<br>21                | 2<br><b>96</b>                  | 7<br>6                    | 29                    | 123       |
| Garland Fire Department                            | 147                    | 53                              | O                         |                       | 200       |
| Saginaw Fire Department                            | 4                      | 2                               | 22                        | 3                     | 31        |
| Irving Fire Department                             | 170                    | 51                              | <b></b>                   | J                     | 221       |
| N. Richland Hills Fire Dept.                       | 41                     | 16                              |                           |                       | 57        |
| Benbrook Fire Department                           | 16                     | 3                               | 10                        |                       | 29        |
| Farmers Branch Fire Dept.                          | 54                     | 8                               | ~                         |                       | 62        |
| University Park Fire Dept.                         | 30                     | 8<br>3<br>5<br>1<br>3<br>2<br>8 |                           |                       | 33        |
| Seagoville Fire Department                         | 5                      | 5                               | 12                        | 4                     | 26        |
| Keller Fire Department                             | 6                      | 1                               | 20                        | 4 3                   | 31        |
| Azle Fire Department                               | 4                      | 3                               | 22                        | 3                     | 32        |
| Crowley Fire Department                            |                        | 2                               | 30                        |                       | 32        |
| Rowlett Fire Department                            | 15                     |                                 | 15                        | 1                     | 39        |
| Waxahachie Fire Department                         | 24                     | 10                              |                           |                       | 34        |
| Denton Fire Department                             | 69                     | 23                              |                           |                       | 92        |
| Bedford Fire Department                            | 20                     | 5                               | 14                        | 3                     | 43        |
| Euless Fire Department                             | 26                     | 15                              |                           |                       | 41        |
| Kennedale Fire Department                          | 1                      | 1                               | 22                        | 2<br>3<br>3           | 26        |
| Ennis Fire Department                              | 18                     | 8                               | 15                        | 3                     | 44        |
| Chico Fire Department                              | _                      | _                               | 25                        | 3                     | 28        |
| Forest Hill Fire Department                        | 9                      | 5                               | 6                         | 2                     | 22        |
| Richland Hills Fire Dept.                          | 9                      | 5                               |                           | _                     | 14        |
| Murphy Fire Department                             |                        | _                               | 30                        | 7                     | 37        |
| Burleson Fire Department                           |                        | 1                               | 35                        | 4                     | 40        |
| Highland Park Fire Departmen                       |                        | 16                              | 5                         |                       | 70<br>260 |
| Arlington Fire Department                          | 183                    | 77                              |                           |                       | 260       |
| Fort Worth Fire Department                         | 740                    | 21                              |                           |                       | 740       |
| Plano Fire Department                              | 120                    | 31                              | 25                        | 4                     | 151       |
| Colleyville Fire Department                        | 6                      | 3                               | 35                        | 4<br>3                | 48<br>30  |
| Midlothian Fire Department                         | 6                      | 1                               | 21                        | 3<br>4                | 19        |
| Fairview Fire Department                           | 1.00                   | 1                               | 14                        | 4                     | 102       |
| Carrollton Fire Department                         | 102                    | 4                               | 26                        |                       | 48        |
| Stephenville Fire Department                       | 18                     | 4                               | 20                        |                       | 46        |
| Grapevine Fire Department                          | 30                     | 16                              | 10                        | 1                     | 27        |
| Mansfield Fire Department                          | 8<br>21                | 8<br>7                          | 22                        | 1<br>5                | 55        |
| Watauga Public Safety                              | 21                     | ′                               | 14                        | 8                     | 22        |
| Keene Fire Department<br>Mesquite Fire Department  | 97                     | 38                              | 17                        | J                     | 135       |
| riesquite file behar ullent                        | 71                     | 30                              |                           |                       | 155       |

### APPENDIX 7 (continued)

| Agency                      | Paid Fire-<br>fighters | Paid<br>Officers | Volunteer<br>Firefighters | Volunteer<br>Officers | Tota1       |
|-----------------------------|------------------------|------------------|---------------------------|-----------------------|-------------|
| (TE XOMA)                   |                        |                  |                           |                       |             |
| Denison Fire Department     | 52                     | 6                | -                         |                       | 58          |
| Sherman Fire Department     | 68                     | 14               | -                         |                       | 82          |
| Bonham Fire Department      | 10                     | 4                | 30                        |                       | 44          |
| Honey Grove Fire Department | 1                      | -                | -                         |                       | 1           |
| Gainesville Fire Department | 24                     | 6                | 20                        |                       | 50          |
| Small Cities                | 2                      | -                | 450                       |                       | 452         |
|                             |                        |                  |                           |                       | <del></del> |
| TOTAL                       | 2,264*                 | 600*             | 938*                      | 93*                   | 5,641       |

<sup>\*</sup> Does Not Include Dallas Fire Service Personnel

<sup>\*\*</sup> Includes Total Dallas Personnel

UI.

**18**E MAY 18 11:50

AFFIDAVIT OF PUBLICATION

U/r i

STATE OF TEXAS

COUNTY OF DALLAS

sworn to and subscribed before me this 16th day of May 1988 AD.

Thake Copy for Blan Paula Blessing

PAULA J. BLESSING Notary Public STATE OF TEXAS

My Comm. Exp. June 28, 1989

(END)

## AFFIDAVIT OF PUBLICATION

STATE OF TEXAS

COUNTY OF DALLAS

|     | eared E | . V. 1 | Dyer,  | Assistan | c in and<br>t Classi<br>states | fied D | irecto | r of TH  | E DALLAS | MORNI | th the Federal Corners's Report and Order<br>of Decket 8-112<br>NG NEWS, |
|-----|---------|--------|--------|----------|--------------------------------|--------|--------|----------|----------|-------|--|
|     |         | D      | allas/ | Fort Wor | th Inter                       | nation | al Air | port     |          |       |  |
| was | publis  | hed i  | n THE  | DALLAS M | ORNING N                       | EWS on |        |          |          |       |  |
|     |         |        | May    | 15, 29,  | & June                         | 12, 19 | 88     |          |          |       |  |
|     |         |        |        |          |                                |        |        | E. V. D: | yer)     |       |  |

sworn to and subscribed before me this 21th day of June 1988 AD.

Paula Blessing

PAULA J. BLESSING
Notary Public
STATE OF TEXAS
My Conum. Exp. cone 28, 1989

(END)

#### Legal Notices

T-11

PUBLIC NOTICE
ANNOUNCEMENT OF
THE INITIAL
PEGION 40 PUBLIC SAFETY
PLANNING MEETING
The purpose of this Public Notice is to announce the initial
meeting of Region 40 Public
Salety Planning Committee.
Region 40 encompasses all
counties within the following
Councils of Governments
areas:
1. North Central Texas COG
3. Texoma Regional Planning
Commission
4. Ark-Tex COG
DATE-TIME:
June 14, 1988, 10:00 A.M.
LOCATION:
DFW International Airport
Administration Building
East Airfield Drive
Dallas/Fort Worth Airport,
Texas 75261
CONVENOR:
W.J. Blair, Jr.
P.O. Drawer DFW
DWF Airport, Texas 75261
(214) 574-642 or (214) 574-6785
All parties located within the
boundaries of Region 40 and
are interested in participating
in the public safety planning
precass are encouraged to confact the Convenor listed above.
This notice is in accordance
with the Federala Cormer in the
metter of Docket 87-112.

#### PRESS RELEASE April 12, 1988

## ANNOUNCEMENT OF THE INITIAL REGION 40 PUBLIC SAFETY PLANNING MEETING

The purpose of this Public Notice is to announce the initial meeting of Region 40 Public Safety Planning Committee. Region 40 encompasses all counties within the following Councils of Governments' areas:

- 1. North Central Texas COG
- 2. East Texas COG
- 3. Texoma Regional Planning Commission
- 4. Ark-Tex COG

DATE/TIME: June 14, 1988 10:00 A.M.

LOCATION: DFW International Airport

Administration Building
East Airfield Drive

Dallas/Fort Worth International Airport, Texas

CONVENOR: W. J. Blair, Jr.

P.O. Drawer DFW

DFW Airport, Texas 75261 (214)574-6642 or (214)574-6785

All parties located within the boundaries of Region 40 and are interested in participating in the public safety planning process are encouraged to contact the Convenor listed above.

This notice is in accordance with the Federal Communication's Report and Order in the matter of Docket 87-112.

## International Airport

Oris W. Dunham, Jr. Executive Director

April 8, 1988

Mr. Larry Jordan, President
NATIONAL ASSOCIATION OF STATE
EMS DIRECTORS
Emergency Medical Services
1317 Winewood Blvd., Bldg. #8
Tallahassee, FL 32301

Dear Mr. Jordan:

In accordance with the Federal Communications Commission's (FCC) Report and Order released December 18, 1987 in the matter of General Docket No. 87-112, and having been duly certified to the Federal Communications Commission by the Associates Public Safety Communications Officers, Inc. as Convenor of an initial meeting of representatives of parties eligible for radio licensing in the FCC's Public Safety and Special Emergency Radio Services to establish a Regional Planning Committee for Region 40 in the State of Texas, I hereby give Public Notice that such an initial meeting will be held beginning at 10:00 a.m. on June 14, 1988 in the Dallas/Fort Worth International Airport's Administration Building located on East Airfield Drive, Dallas/Fort Worth International Airport, Texas.

The responsibility of the Regional Planning Committee will be to develop a Plan for the use of frequencies in the 821-824 and 866-869 megahertz bands allocated by the FCC for use by such licenses.

Because interoperability with all levels of government is desirable, you are invited to participate. All parties interested in participation in the regional planning process should contact me.

Region 40 encompasses the northeast Counties of Texas as shown on the attached map.

Copies of the Report and Order are available from the FCC's duplication contractor, International Transcription Services, Inc., Suite 140, 2100 M Street, N.W., Washington, D.C. 20037. Phone No. (202)857-3800.

W.J. Blair, Jr. Region 40 Convenor P.O. Drawer DFW DFW Airport, Texas 75261 (214)574-6642

Attachment - Region 40 County Map

#### ASSOCIATIONS AND ORGANIZATIONS

Executive Director AASHTO 444 N. Capitol St., NW Suite 225 Washington, D.C. 20001

Executive Director
AMERICAN HOSPITAL ASSOCIATION
840 N. Lake Shore Drive
Chicago, IL 60611

Mr. Robert Tall APCO 930 Third Avenue P.O. 669 New Smyrna Beach, FL 32070

Executive Director
Forestry - Conservation Communications
Association
P.C. Box 3758
Charlottesville, VA 22903-0758

Executive Director FOREST INDUSTRIES TELECOMMUNICATIONS P.O. Box 5446 Eugene, OR 97405

Executive Director
INTERNATIONAL ASSOCIATION OF
CHIEFS OF POLICE
13 Firstfield Road
P.O. Box 6010
Gaithersburg, MD 20878

Executive Director IBTTA 2120 L St., NW #305 Washington, D.C. 20037

Executive Director
INTERNATIONAL MUNICIPAL SIGNAL
ASSOCIATION
P.O. Box 8249
Fort Worth, Texas 76112

#### APPENDIX 8 (continued)

Executive Director LAND MOBILE COMMUNICATIONS COUNCIL 1150 - 17th St., NW Suite 1000 Washington, D.C. 20036

Executive Director
NATIONAL ASSOCIATION OF BUSINESS
AND EDUCATIONAL RADIO
1330 New Hampshire, NW #122
Washington, D.C. 20036

Mr. Robert O. Parrish AMERICAN NATIONAL RED CROSS 18th and D Streets, NW Washington, D.C. 2006

Mr. Bob Kellow AMERICAN COLLEGE OF EMERGENCY PHYSICIANS P.O. Box 619911 Dallas, Texas 75261-9911

Mr. Larry Jordan, President
NATIONAL ASSOCIATION OF STATE
EMS DIRECTORS
Emergency Medical Services
1317 Winewood Blvd., Bldg. #8
Tallahassee, FL 32301

Mr. Raymond C. Scheppach
Executive Director
NATIONAL GOVERNORS ASSOCIATION
Hall of the States
444 N. Capitol Street, NW
Washington, D.C. 20001

Mr. Garth G. Shibles NATIONAL COMMUNICATIONS SYSTEM 8th and S. Courthouse Road Arlington, VA 22204

## International Airport

Oris W. Dunham, Jr. Executive Director

April 11, 1988

FEDERAL COMMUNICATION COMMISSION News Media Information 1919 M Street, N.W. Washington, D.C. 20554

#### Gentlemen:

Please publish the attached Public Notice announcing the initial meeting of Region 40 Public Safety Planning Committee.

W.J. Blair, Jr.

Convenor, Region 40

cc: Dr. Tom Stanley

FEDERAL COMMUNICATION COMMISSION

Office of Engineering Technology

Room 7002

2025 M St., N.W.

Washington, D.C. 20554

Mr. Ralph Haller, Chief

FEDERAL COMMUNICATION COMMISSION

Room 5002

2025 M St., N.W.

Washington, D.C. 20554

PAT:L-0148jb

#### FEDERAL COMMUNICATION COMMISSIONS

FEDERAL COMMUNICATION COMMISSION News Media Information 1919 M Street, N.W. Washington, D.C. 20554

Dr. Tom Stanley
FEDERAL COMMUNICATION COMMISSION
Office of Engineering Technology
Room 7002
2025 N Street, N.W.
Washington, D.C. 20554

Mr. Ralph Haller, Chief FEDERAL COMMUNICATION COMMISSION Room 5002 2025 M Street, N.W. Washington, D.C. 20554

Ms. Sandra Morris FEDERAL COMMUNICATION COMMISSION 9330 LBJ Freeway Dallas, Texas

## International Airport

Oris W. Dunham, Jr. Executive Director

April 13, 1988

Editor FCC WEEK 1300 North 17th Street Arlington, VA 22209

Dear Sir:

Attached is a copy of the Press Release announcing the Initial Region 40 Public Safety Planning meeting. As a matter of public service to your readers, you are encouraged to publish this information in your publication.

In accordance with the Federal Communications Commission's (FCC) Report and Order released December 18, 1987 in the matter of General Docket No. 87-112, and having been duly certified to the Federal Communications Commission by the Associates Public Safety Communications Officers, Inc. as Convenor of an initial meeting of representatives of parties eligible for radio licensing in the FCC's Public Safety and Special Emergency Radio Services to establish a Regional Planning Committee for Region 40 in the State of Texas, I hereby give Public Notice that such an initial meeting will be held beginning at 10:00 a.m. on June 14, 1983 in the Dallas/Fort Worth International Airport's Administration Building located on East Airfield Drive, Dallas/Fort Worth International Airport, Texas.

The responsibility of the Regional Planning Committee will be to develop a Plan for the use of frequencies in the 821-824 and 866-869 megahertz bands allocated by the FCC for use by such licenses. Region 40 encompasses the northeast Counties of Texas as shown on the attached map.

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W.J. Blair, Jr. Region 40 Convenor P.O. Drawer DFW DFW Airport, Texas 75261 (214)574-6642

Attachments - Region 40 County Map Press Release

#### **PUBLICATIONS**

Editor COMMUNICATIONS WEEK 600 Community Drive Manhasset, NY 11030

Editor MOBILE RADIO TECHNOLOGY P.O. Box 12901 Overland Park, KS 66212

Editor RCR 1728 Downing St. Denver, CO 80218

Editor
NETWORK WORLD
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Framingham, Mass. 01701-9171

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TELECOMMUNICATIONS REPORTS
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Washington, D.C. 20045

Editor
INDUSTRIAL COMMUNICATIONS
7811 Montrose Road
Potomac, MD 20854

Editor COMMUNICATIONS DAILY 1836 Jefferson Place, NW Washington, D.C. 20036

Editor
COMMUNICATIONS NEWS
124 South 1st Street
Geneva, IL 60134

Editor FCC WEEK 1300 North 17th Street Arlington, VA 22209

## Dallas / Fort Worth

## International Airport

Oris W. Dunham, Jr. Executive Director

April 8, 1988

Regional Director FEDERAL EMERGENCY MANAGEMENT AGENCY Federal Center 800 N. Loop 288 Denton, TX 76201-3698

Dear Sir:

In accordance with the Federal Communications Commission's (FCC) Report and Order released December 18, 1987 in the matter of General Docket No. 87-112, and having been duly certified to the Federal Communications Commission by the Associates Public Safety Communications Officers, Inc. as Convenor of an initial meeting of representatives of parties eligible for radio licensing in the FCC's Public Safety and Special Emergency Radio Services to establish a Regional Planning Committee for Region 40 in the State of Texas, I hereby give Public Notice that such an initial meeting will be held beginning at 10:00 a.m. on June 14, 1988 in the Dallas/Fort Worth International Airport's Administration Building located on East Airfield Drive, Dallas/Fort Worth International Airport, Texas.

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W.J. Blair, Jr. Region 40 Convenor P.O. Drawer DFW DFW Airport, Texas 75261 (214)574-6642

Attachment - Region 40 County Map

#### STATE AND FEDERAL AGENCIES

Mr. Charles L. Hutchison NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION 14th and Constitution Ave., NW - Rm. 4706 Washington, DC 20230

Mr. Bob Davis GOVERNOR'S OFFICE OF BUDGET AND PLANNING P.O. Box 12428 Austin, Texas 78711 512: 463-1778

Mr. Robert Lansford DEPARTMENT OF PUBLIC SAFETY Division of Emergency Management P.C. Box 4087 580S N. Lamar Blvd. Austin, Texas 78773-0001

Mr. Rydar Scott
OFFICE OF GOVERNOR CRIMINAL JUSTICE DIVISION
P.C. Box 12428
Austin, Texas 78711
512, 463-1788

Ms. Sandra Morris FEDERAL COMMUNICATIONS COMMISSION 9330 LBJ Freeway Dallas, Texas 214,767-5690

Administrator DRUG ENFORCEMENT ADMINISTRATION 1880 Regal Row Dallas, Texas 75235 214/767-7151 Special Agent in Charge FEDERAL BUREAU OF INVESTIGATION 402 U.S. Courthouse Fort Worth, Texas 76102 817/336-7135

Special Agent in Charge FEDERAL BUREAU OF INVESTIGATION 1801 N. Lamar Street Dallas, TX 214/720-2200

Regional Administrator U.S. SECRET SERVICE Department of Treasury 801 Cherry Street Fort Worth, Texas 76102 817/334-2015

Regional Administrator U.S. SECRET SERVICE Department of Treasury 525 Griffin Dalias, Texas 214/767-8021

Regional Commissioner U.S. CUSTOMS SERVICES Department of Treasury P.C. Box 619050 DFW Airport, Texas 75261 214, 574-2170

Regional Director ALCOHOL, TOBACCO AND FIREARMS Department of Treasury 819 Taylor Street Fort Worth, Texas 76102 817/334-2771

Regional Director ALCOHOL, TOBACCO AND FIREARMS Department of Treasury 1100 Commerce Street Dallas, Texas 214/767-2281 Director
FEDERAL EMERGENCY MANAGEMENT AGENCY
500 C Street, SW
Washington, DC 20472

Regional Director FEDERAL EMERGENCY MANAGEMENT AGENCY Federal Center 800 N. Loop 288 Denton, TX 76201-3698 817/898-9399

Director
NATIONAL COMMUNICATIONS SYSTEM
Washington, DC 20305-2010

Assistant Secretary for
Communications and Information
NATIONAL TELECOMMUNICATIONS AND
INFORMATION ADMINISTRATION
Department of Commerce
Washington, DC 20230

Director NATIONAL SECURITY AGENCY Fort George G. Meade, MD 20755-6000

Mr. Jimmy Dunn, Progam Administrator Public Health Region 5 2561 Matlock Road Arlington, Texas 76015

Mr. Jim Arnold, Program Administrator Public Heath Region 7 P.O. Box 2501 Tyler, Texas 75710

Ms. Pat West TEXAS DEPARTMENT OF HEALTH 1100 West 49th Street Austin, Texas 78756

# MINUTES OF THE INITIAL PUBLIC SAFETY REGION 40 PLANNING COMMITTEE MEETING

The initial meeting of the Public Safety Region 40 Planning Committee was held on Tuesday, June 14, 1988, in the Board Room of the Dallas/Fort Worth International Airport Board. The meeting was called to order at 10:15 a.m. by the Convenor, W.J. Blair, Jr.

#### Attendees:

Dan Scrivner David Cleveland Tom Watson Janell Browning Pat Worsham Jimmy Dunn Charles Barbier Joanne Jackson Michael Williams David M. West Bryan Judd Ron H. Staggs Byron Harrison J.R. Bell Wes Trussell Charles O. Bowles Chuck Graves Paul Wellborn E.B. Gladding J.D. McGee Fred Keithley Coy Martin Capt. Jim Lovell Emil Vogel James M. Atkins, M.D. W.J. Blair, Jr. Martin S. Angel Sandra Morris John L. Long Ron Minatrea Barry D. Worden Harold Simpson John Van Son Ed Alamo James W. Griffin Frances Pelley Alan Williams Mike B. Smith Charles Whitley, Chief

Carl E. Dunlap, Chief

City of Dallas Cooke County City of Gainesville Ark-Tex Council of Govts. Texas Department of Health Public Health, Region 5 Texas Forest Service N. Central Texas Council of Govts. N. Central Texas Council of Govts. Denison City Fire Department Texas Department of Public Safety Texas Department of Public Safety Plano Police Department **Bell Communications** Fort Worth Police Department City of Dallas, Retired City of Fort Worth General Electric City of Greenville, City of Greenville N. Central Texas Council of Govts. Fort Worth Police Department Denison Police Department Motorola University of Texas SW Medical Center Dallas/Fort Worth Airport Board Texas Turnpike Authority Federal Communications Commission City of Fort Worth Motorola City of Arlington Motorola Resource Motorola Motorola Texas Turnpike Authority Texoma Regional Planning Commission Texoma Regional Planning Commission Air Waves Communications Paris Police Department Gainesville Police Department

As the first order of business, Convenor W. J. Blair Jr. appointed Pat Marcum to serve as Temporary Recording Secretary until the Regional Planning Committee Chairman is elected.

Convenor Blair stated that the purpose of this meeting was to convene as the initial meeting of the Regional Planning Committee for Region 40 as required in the Report and Order from the Federal Communications Commission in Docket 87-112.

Background and history of the developments leading to the public safety planning process, allocation of additional 800 mHz. spectrum, and the regional planning requirement were given by Convenor Blair.

Convenor Blair introduced Mr. Pete Gladding, the President of the Executive Board of the North Central Texas Council of Governments and a member of The North Central Texas Council of Governments' Public Safety Communications Advisory Committee and Mr. Fred Keithley, Director of Human Services for North Central Texas Council of Governments. Mr. Keithley then introduced Janell Browning, Criminal Justice Director for the Ark-Tex Council of Governments and Frances Pelley, Texoma Regional Planning Commission.

Convenor Blair explained the planning involvement of the North Central Texas Council of Governments and its Advisory Committee as it related to regional planning before the regional boundaries were established by the Report and Order.

Convenor Blair explained that this was an open meeting, a meeting whose intent is to represent eligible users within the 42 counties of Region 40. He also explained that the election of a Chairman would be conducted in accordance with Robert's Rules of Order for an initial organizational meeting.

Convenor Blair then stated that he would entertain a motion for the Chairman of Region 40 Planning Committee. Dan Scrivner moved that Mr. Charlie Bowles be made the Chairman of the Region 40 Planning Committee. The motion was seconded by John Long.

After some discussion as to the requirements of a chairman and the qualifications of Mr. Bowles, the question was called. Mr. Bowles was elected chairman with one dissenting vote.

Following the election of chairman, the meeting was recessed for a brief coffee break. After the break, Chairman Bowles called the meeting to order by having all attendees introduce themselves.

Chairman Bowles asked all to be sure and sign the attendance sheet and provide the information required by the Report and Order.

The Chairman then appointed Pat Marcum as Permanent Recording Secretary.

Having passed out a set of suggested temporary rules, Convenor Blair moved that they be adopted as Temporary Rules to serve the Committee until such time as they are replaced by permanent rules. Mr. Gladding seconded the motion. The motion carried.

As required by the newly adopted Temporary Rules, the Chairman called for the election of a Vice-Chairman of the Regional Planning Committee. Dan Scrivner moved that W. J. Blair Jr. be elected Vice-Chairman. The motion was seconded by John Long. The motion carried.

#### Appendix 9 continued

The Chairman announced that a permanent rules committee would be appointed subsequent to today's meeting.

Chairman Bowles explained that the Regional Planning Committee would be organized by establishing Task Teams as was earlier referred to by Convenor Blair and that sign up sheets are available for each Task Team. He encouraged all to sign up to work on the Task Team of specific interest. He also stated that he would assign those members of the North Central Texas Public Safety Communications Advisory Committee to the same tasks they have on the COG Advisory Committee.

A motion was made and seconded that the NCTCOGPSCAC subcommittee chairman serve as the Task Team Facilitators for the Regional Planning Committee. The motion passed. The Chairman then instructed these persons to contact those who sign up for their respective Task Teams.

Convenor Blair passed out a draft of the work that the North Central Texas Communications Advisory Committee had written to be used as the basis for the Regional Plan.

Chairman Bowles announced that the next committee meeting would be July 26, 1988 at the facilities of the North Central Texas Council of Governments in Arlington, Texas.

The Chairman thanked Joe Blair for his excellent contribution as the Convenor. He announced that the draft of our Regional Plan should be complete enough to present to the FCC informally at the APCO National Conference to be held in Little Rock, Arkansas on August 8, 1988.

The Chairman announced his address and telephone number with instructions to call if questions arise.

There being no further business on the agenda, a motion and second was made from the floor to adjourn. The motion passed and the meeting was adjourned.

Pat Marcum, Recording Secretary

Charlie O. Bowles. Chairman

Passed July 26th, 1988

#### MINUTES OF THE SECOND PUBLIC SAFETY REGION 40 PLANNING COMMITTEE MEETING

The second meeting of the Public Safety Region 40 Planning Committee was held on Tuesday, July 26, 1988, in the North Central Texas Council of Government Conference Room. The meeting was called to order at 9:45 a.m by Chairman, Charles Bowles.

#### Attendees:

George Teague City of Weatherford/Parker County

Barry Worden City of Arlington
Dan Scrivner City of Dallas

W.J. Blair, Jr. Dallas/Fort Worth Airport Board

Ken Yoder State of Texas Frequency Coordinator

Jimmy Dunn EMS, Public Health, Region 5

Gary Price East Texas Council of Governments

J.R. Bell Communications

Roger Dutcher ElectroComm Automation

C.O. Bowles City of Dallas, Retired

C.A. Graves City of Fort Worth

Joe Hanna Richardson Police Department

Buddy Braziel City of Carrollton

Emil Vogel Motorola
Harold Simpson Motorola

Tom Newell University of North Texas, Telecom Department

Frances Pelley Texoma Council of Governments

Pat Worsham Texas Department of Health

Alan Williams County of Denton

APPENDIX 9 (continued)

As the first order of business Chairman Bowles called the meeting to order by welcoming all in attendance and by having all attendees introduce themselves.

The last meeting minutes were read by the Recording Secretary. W.J. Blair, Jr. moved that the minutes be approved with all typographical errors corrected and Mr. Gladding seconded the motion. The minutes were approved by an unanimous vote.

Chairman Bowles gave a brief summary of work done thus far.

Revised drafts of the Regional Plan were handed out. The draft was read, revisions discussed at length, and incorporated as appropriate.

Chairman Bowles explained that the Regional Plan at this stage was only a draft and would be taken to the National APCO Conference in Little Rock, Arkansas for review by the FCC and any changes would be made per their suggestions. Chairman Bowles explained that this draft is in no way the final Regional Plan.

Chairman Bowles announced that the next committee meeting would be held August 23, 1988 at 9:30 at the facilities of the North Central Texas Council of Governments in Arlington, Texas.

Questions were asked in regards to the costs of the Regional Planning Committee. Mr. Fred Keithley of the North Central Texas Council of Governments stated at this time the Council of Government felt that this cause was appropriate for the Council to be involved in and would assume the costs of printing, distribution, etc.

## APPENDIX 9 (continued)

There being no further business on the agenda, a motion and second was made from the floor to adjourn. The motion passed and the meeting was adjourned.

Pat Marcum, Recording Secretary

Charles Bowles, Chairman

# MINUTES OF THE THIRD PUBLIC SAFETY REGION 40 PLANNING COMMITTEE MEETING

The third meeting of the Public Safety Region 40 Planning Committee was held on Tuesday, August 23, 1988, in the North Central Texas Council of Governments Conference Room. The meeting was called to order at 9:50 a.m by Chairman, Charles Bowles.

#### Attendees:

Charles O. Bowles

City of Dallas, Retired

Byron Harrison

Plano Police Department

Don Nelson

Mesquite Fire Department

Frances Pellev

Texoma Council of Governments

Chuck Graves

City of Fort Worth

Gary Price

East Texas Council of Governments

Bryan L. Judd

Texas Department of Public Safety

Kenneth C. Yoder

Texas Department of Public Safety

Dan Scrivner

City of Dallas

Harold Simpson

Motorola

Joe Hanna

Richardson Police Department

Emil Vogel

Motorola

Ron Minatrea

Motorola

Wes Trussell

Fort Worth Police Department

Sandra Morris

Federal Communications Commission

Jimmie L. Badgett

Dallas County Fire Marshall

Buddy Braziel

City of Carrollton

E. B. Gladding

North Central Texas Council of Governments

W.J. Blair, Jr.

DFW International Airport Board

Fred Keithley

North Central Texas Council of Governments

Mike Williams

North Central Texas Council of Governments

Joann Jackson

North Central Texas Council of Governments

As the first order of business Chairman Bowles called the meeting to order by welcoming all in attendance and by having all attendees introduce themselves.

Chairman Bowles gave a brief summary of the APCO Convention held in Little Rock,
Arkansas. A rough draft of the Plan was presented to the FCC for their review and in
their opinion, minor changes were needed.

The last meeting minutes were read by the Recording Secretary. Mr. E.B. Gladding moved that the minutes be approved with all typographical errors corrected and Mr. Buddy Braziel seconded the motion. The minutes were approved by an unanimous vote.

Chairman Bowles thanked Fred Keithley of the North Central Texas Council of Governments for the attractive illustration and binder of the Plan as given to the FCC. He also stated that our Plan was the most attractive Plan submitted.

Emil Vogel gave the Committee a general overview of the Notice of Inquiry and recommended that this Committee comment on the Notice.

Mr. Fred Keithley of the North Texas Council of Governments introduced the Council of Governments present. The Texoma Council of Government and the East Texas Council of Governments were both in agreement that their regions supported the Regional Plan as written.

Mr. Joe Blair requested permission to file comments, in the name of the Committee, to the Notice of Inquiry and also to state the fact that the standards issue is a completely different issue from the planning issue. If time permits, a subcommittee will be formed to answer the Notice of Inquiry.

APPENDIX 9 (continued)

Mr. Blair pooled the Committee on whether standards should be written before or after

the frequencies are assigned. Unanimously, the Committee agreed that standards should

be written after the frequencies are assigned.

Mr. Blair made a motion to response to the Notice of Inquiry, Mr. Buddy Braziel

seconded.

The Regional Plan draft as submitted to the FCC in Little Rock had been previously

mailed to all Committee members. The Regional Plan was reviewed page by page,

revisions as suggested by the FCC were discussed at length, and incorporated as

appropriate.

A motion to approve the Regional Plan with editorial privileges was made by Byron

Harrison and seconded by Buddy Braziel, the motion passed unanimously.

Chairman Bowles will call the next meeting of the Committee members is needed. No

meeting is scheduled at this time.

There being no further business on the agenda, a motion for adjournment was made by

Buddy Braziel and seconded by Byron Harrison, the motion carried

Pat Marcum, Recording Secretary

Charles Bowles Chairman

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#### REGIONAL COMMUNICATIONS PLANNING COMMITTEE - REGION 40

- \* Dr. James Atkins Associate Professor of Internal Medicine UT Health Science Center 5323 Harry Hines Dallas, Texas 75235 (214) 688-3777
- \* Jim Badgett Fire Marshal Dallas County 3819 Maple Avenue Dallas, Texas 75219 (214) 521-0261
- \*Joe Blair
  Supervisor of Maintenance Engineering
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  Dallas/Fort Worth Airport, TX 75261
  (214) 574-6642
- \* Charles Bowles, Region 40 Chairman Consultant and Former Communications Supervisor City of Dallas 3310 Matador Garland, Texas 75042 (214) 276-7855
- \* Buddy Braziel Communications Manager City of Carrollton P. O. Box 110535 Carrollton, Texas 75011 (214) 446-3660
- \* Jimmy Dunn
  Program Manager, EMS Division
  Texas Dept. of Health Region 5
  2561 Matlock Road
  Arlington, Texas 76015
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- \*E. B. Gladding
  Mayor Pro Tem
  City of Greenville
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- \*Joe Hanna Richardson Police Department P. O. Box 830309 Richardson, Texas 75083 (214) 236-3818
- \*Commander Byron Harrison Communications Plano Police Department P. O. Box 860358 Plano, Texas 75096-0358 (214) 578-7235
- \*William Keffler
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  City of Richardson
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- \*Gene Kilgore
  Manager of Communications
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  (214) 660-9060
- \*Bryan Judd
  Communications Supervisor
  Texas Department of Public Safety
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  (214) 226-7611
- \*John Long
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  City of Fort Worth
  1000 Throckmorton
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  (817) 870-7889

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\*Bob Minor
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\*Don Nelson Fire Chief City of Mesquite P. 0. Box 137 Mesquite, Texas 75150 (214) 216-6267

\*Capt. John Pempsel
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\*Dan Scrivner
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Department of Information Services
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\*George Teague
Fire Chief
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\*Alan Williams
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\*Barry Worden
Telecommunications Administrator
City Manager's Office
City of Arlington
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\*\*Bob Bell
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\*\*Sandra Morris
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\*\*Harold Simpson Motorola Inc. 3320 Beltline Road Dallas, Texas 75234 (214) 888-6973

\*\*Emil Vogel
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\*\* Paul Wellborn General Electric 13747 Monford, Suite 205 Dallas, Texas 75240 (214) 661-9697

\*\* Kenneth Yoder
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Ed Alamo Motorola 3320 Beltline Road Dallas, Texas 75234 (214) 888-6759

Martin Angel Texas Turnpike Authority 3015 Raleigh Dallas, Texas 75219 (214) 522-6200 Charles Barbier Texas Forest Service Highway 59 Lufkin, Texas 75901 (409) 639-8100

Janell Browning Ark-Tex Council of Governments P. O. Box 5307 Texarkana, Texas 75503 (214) 832-8636

David Cleveland Cooke County 305 S. Chestnut Gainesville, Texas 76240 (817) 665-1012

Chief Carl E. Dunlap Gainesville Police Department 200 S. Rusk Gainesville, Texas 76240 (817) 668-7777

J. E. Glass
Support Services Administration
Collin County Sheriff's Department
200 S. McDonald
McKinney, Texas
(214) 699-1023

James W. Griffin Texas Turnpike Authority P. O. Box 860358 Dallas, Texas 75219 (214) 522-6200

Capt. Jim Lovell Denison Police Department 108 W. Main Denison, Texas 75020 (214) 465-2422

Coy Martin
Fort Worth Police Department
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J. D. McGee City of Greenville P. O. Box 1849 Greenville, Texas 75401 (214) 455-5310 Ron Minatrea Motorola Inc. 3320 Beltline Road Dallas, Texas 75234 (214) 888-6804

Frances Pelley
Executive Director
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(214) 786-2958

Gary Price
East Texas Council of Governments
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Kilgore, Texas 75662
(214) 984-8641

Mike Smith Air Waves Communications 4801 Lamar Avenue Paris, Texas 75460 (214) 785-8881

Ron H. Staggs Texas Department of Public Safety 350 W. I 30 Garland, Texas 75043 (214) 226-7611

Wes Trussell Fort Worth Police Department 350 W. Belknap Street Fort Worth, Texas 76102

John Van Son Motorola 3320 Beltline Road Dallas, Texas 75234 (214) 888-6751

Tom Watson City of Gainesville 200 S Rusk Gainesville, Texas 76240 (817) 665-4323 Ext. 42

David M. West City of Denison Fire Department 700 W. Chestnut Denison, Texas 75020 (214) 465-2720 Ext. 180 Chief Charles G. Whitley Paris Police Department 725 S. E. 38th Street Paris, Texas 75466 (214) 788-6688 Pat Worsham Texas Department of Health 1100 W. 49th Street Austin, Texas 76063 (512) 458-7111

- \* Members of NCTCOG's Public Safety Communications Advisory Committee
- \*\* Resource Members of NCTCOG's Public Safety Communications Advisory Committee

#### **EVALUATION CRITERIA**

The criteria incorporate a filing concept which provides for the evaluation of all applications for available spectrum. The evaluation is a sequence of events that will be followed in the assignment of the 821-824/866-869 MHz spectrum within Region 40.

In order to provide for maximum frequency reuse, the allocation has been placed in county frequency pools as a starting point. An initial closing date of November 1, 1988, has been established for all survey-identified applicants to submit applications in accordance with this Regional Plan. In order to make frequency assignments objectively, the Regional Review Committee will evaluate these initial applications in accordance with the criteria established by this section of the plan, awarding a score for each application. That score will be the total of the points awarded in the five categories outlined below. Frequency assignments will be made for these applications using the appropriate county frequency pool. If in the four Metroplex counties, valid applications exceed the available spectrum, frequencies will be awarded to those applicants with the highest descending score order.

Applications received after the November 1, initial closing date will be evaluated by the Regional Review Committee in similar fashion each month.

Frequency assignments will be made first by utilizing individual county frequency pools as the spectrum resource. As these pools are depleted, frequencies will be assigned utilizing protection criteria as defined in this Plan, until all frequencies offering minimum protection are depleted.

#### **EVALUATION SCORING CATEGORIES**

1. <u>Service</u> (maximum score, 35 points). Each of the eligible services has a predetermined point value (see value rating, page \_\_\_). An applicant for a system for multiple services will be scored on the basis of the sum of the maximum points for each service reduced by the percentage that each service represents of the total system. For example, a system application for use by 50 percent police, 25 percent local government (utility operations) and 25 percent highway (street maintenance) would be scored as follows:

Police - 35 points maximum value times 50 percent system use equals a score of 17.5 points.

Local Government (utility operations) - 30 points maximum value times 25 percent system use equals a score of 7.5 points.

Highway (street maintenance) - 30 points maximum value times 25 percent system use equals a score of 7.5 points.

Total points awarded for this system is the sum of 17.5, 7.5, and 7.5, for a total of 32.5 points.

2. <u>Intersystem Communications</u> (maximum score, 10 points). The application is scored on the degree of interoperability that is demonstrated, with a range of points from 0 to 10. No points are awarded for use of the mandated designated interoperability channels. These points are awarded for the applicant's ability to communicate with different levels of government and other services during times of emergency.

#### APPENDIX 11 (continued)

- 3. <u>Cooperative Systems</u> (maximum score, 25 points). Those applicants that have demonstrated that they are part of a cooperative, multi-organization system will be scored on a range of 0 to 25 points depending upon the extent of the cooperation.
- 4. System Implementation Factors (maximum score, 10 points). This category scores the applicant from 0 to 10 points on the degree of budgetary commitment. If funding has been provided by a line item budget or equivalent in a sufficient amount for immediate implementation, a score of 10 points will be awarded.
- 5. <u>Give-back Frequencies</u> (maximum score, 20 points). This category is divided into two factors, each with a point value of 0 to 10 points.
  - a. The greater the number of give-back frequencies, the greater the number of points that will be awarded up to a maximum of 10.
  - b. The greater the need for the give-back frequencies by other agencies, the greater the number of points that will be awarded up to a maximum of 10. For example, a statewide police frequency, as a give-back, would not be awarded as many points as would a needed VHF frequency usable by a local police or fire department.

Points are totaled for each application and the applications are prioritized by the Regional Review Committee according to the total score. As frequencies are assigned, the appropriate county frequency pool is updated to reflect the frequencies assigned.

Systems implementation is monitored by the Regional Review Committee which determines the progress being made. If progress is found lacking, the licensee is informed of the consequences of the lack of progress. If continued monitoring indicates that sufficient progress is not taking place, the licensee is notified of pending action of the Regional Review Committee to recommend to the FCC that the license be withdrawn. Should the license be withdrawn, these frequencies will be returned to the county frequency pool.

#### APPEAL PROCESS

Throughout the frequency allocation process, applicants are given opportunities to appeal decisions which have caused rejection of their application. The appeal process has two levels; the Regional Review Committee and the Federal Communications Commission (FCC). An applicant who decides to appeal a rejection should file the appeal with the Regional Review Committee within 30 days from notification of rejection. If the applicant is not satisfied with the Regional Review Committee's final decision based on the appeal, the applicant may file an appeal with the FCC by letter to the Secretary. The FCC's decision will be final and binding upon all parties.

## APPENDIX 11 (continued)

## NORTH CENTRAL AND NORTH EAST TEXAS REGION 40 PLAN

| VALUE RATING FOR TYPES OF USAGE  | POINT VALUE                |  |
|--|----------------------------|--|
| Local Government   |                            |  |
| Transit Systems Utility Operations Administration Maintenance Security Patrols Other Functions | 15<br>30<br>15<br>15<br>15 |  |
| Police   | 35                         |  |
| Fire   | 35                         |  |
| Highway  | 30                         |  |
| Forest Fire<br>Conservation  | 30<br>25                   |  |
| Medical Services   |                            |  |
| Hospitals<br>Patient Transfer (vans, etc.)<br>Physicians                                       | 10<br>5<br>5               |  |
| Emergency Medical Services (BLS and ALS)   | 35                         |  |
| Handicapped Transportation (vans, etc.)  | 15                         |  |
| Veterinarians  | 5                          |  |
| Disaster Relief Organizations  | 15                         |  |
| School Buses   |                            |  |
| Private Under Contract<br>School District Operated<br>Included in an approved Emergency        | 5<br>5                     |  |
| Management Evacuation Plan   | 15                         |  |
| Beach Patrols  | 5                          |  |
| Isolated Areas   | 5                          |  |
| Comm. Standby Facilities   | 5                          |  |
| Repair of Comm. Facilities   | 5                          |  |

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APPENDIX 12

## TABULATED DATA FROM CAREY PROPAGATION CURVES

| UHF                  | F(50         | ,50>         | dBu/kW       | erp          |
|----------------------|--------------|--------------|--------------|--------------|
| MILE                 | 100          | 222          | <b>500</b>   | 1000         |
| MILES                | 100          | 200          | 500          | 1000         |
| 5                    | 60.8         | 66.0         | 72.9         | 79.0         |
| 6                    | 56.9         | 61.7         | 68.7         | 74.6         |
| 7                    | 53.4         | 58.2         | 65.1         | 71.0         |
| 8                    | 50.2         | 55.1         | 62.0         | 68.0         |
| 9                    | 47.4         | 52.4         | 59.4         | 65.4         |
| 10                   | 44.8         | 49.9         | 57.0         | 63.1         |
| 11                   | 42.4         | 47.7         | 54.9         | 60.9         |
| 12                   | 40.2         | 45.6         | 52.9         | 59.0         |
| 13                   | 38.2         | 43.7         | 51.1         | 57.2         |
| 14                   | 36.3         | 41.9         | 49.5         | 55.4         |
| 15                   | 34.6         | 40.1         | 47.9         | 53.8         |
| 16                   | 33.0         | 38.5         | 46.3         | 52.2         |
| 17                   | 31.5         | 37.0         | 44.9         | 50.7         |
| 18                   | 30.0         | 35.6         | 43.5         | 49.2         |
| 19                   | 28.7         | 34.3         | 42.1         | 47.9         |
| 20                   | 27.5         | 33.0         | 40.8         | 46.5         |
| 21                   | 26.4         | 31.7         | 39.5         | 45.3         |
| 22                   | 25.3         | 30.6         | 38.3         | 44.1         |
| 23                   | 24.3         | 29.5         | 37.1         | 42.9         |
| 24                   | 23.3         | 28.4         | 35.9         | 41.8         |
| 25                   | 22.4         | 27.4         | 34.8         | 40.7         |
| 26                   | 21.5         | 26.4         | 33.8         | 39.7         |
| 27                   | 20.7         | 25.4         | 32.7         | 38.7         |
| 28                   | 19.9         | 24.5         | 31.7         | 37.7         |
| 29                   | 19.1         | 23.6         | 30.7         | 36.8         |
| 30                   | 18.4         | 22.7         | 29.8         | 35.9         |
| 31                   | 17.6         | 21.8         | 28.9         | 35.0         |
| 32                   | 16.9         | 21.0         | 28.0         | 34.1         |
| 33                   | 16.2         | 20.1         | 27.1         | 33.2         |
| 34<br>35             | 15.6<br>14.9 | 19.3<br>18.6 | 26.3<br>25.5 | 32.4<br>31.5 |
| 35<br>36             | 14.3         | 17.8         | 24.6         | 30.7         |
| 3 <del>0</del><br>37 | 13.7         | 17.1         | 23.8         | 29.9         |
| 38                   | 13.0         | 16.4         | 23.0         | 29.1         |
| 39                   | 12.4         | 15.7         | 22.3         | 28.3         |
| 40                   | 11.8         | 15.0         | 21.5         | 27.6         |
| 41                   | 11.2         | 14.3         | 20.7         | 26.8         |
| 42                   | 10.6         | 13.7         | 20.0         | 26.0         |
| 43                   | 10.1         | 13.1         | 19.2         | 25.3         |
| 44                   | 9.5          | 12.5         | 18.5         | 24.5         |
| 45                   | 8.9          | 11.9         | 17.8         | 23.8         |
| 46                   | 8.4          | 11.3         | 17.0         | 23.1         |
| 47                   | 7.9          | 10.7         | 16.3         | 22.3         |
| 48                   | 7.3          | 10.1         | 15.6         | 21.6         |
| 49                   | 6.8          | 9.5          | 15.0         | 20.9         |

UHF cont'd

| MILES | 100  | 200  | 500  | 1000 |
|-------|------|------|------|------|
|       |      |      |      |      |
|       |      | •    |      |      |
| 50    | 6.3  | 8.9  | 14.3 | 20.2 |
| 51    | 5.8  | 8.4  | 13.6 | 19.5 |
| 52    | 5.3  | 7.8  | 13.0 | 18.8 |
| 53    | 4.9  | 7.3  | 12.4 | 18.1 |
| 54    | 4.4  | 6.8  | 11.8 | 17.5 |
| 55    | 4.0  | 6.2  | 11.2 | 16.8 |
| 56    | 3.6  | 5.7  | 10.6 | 16.1 |
| 57    | 3.2  | 5.2  | 10.0 | 15.5 |
| 58    | 2.8  | 4.8  | 9.5  | 14.9 |
| 59    | 2.4  | 4.3  | 9.0  | 14.3 |
| 60    | 2.0  | 3.9  | 8.4  | 13.7 |
| 61    | 1.7  | 3.5  | 7.9  | 13.1 |
| 62    | 1.3  | 3.1  | 7.4  | 12.5 |
| 63    | 1.0  | 2.7  | 6.9  | 12.0 |
| 64    | .7   | 2.3  | 6.4  | 11.4 |
| 65    | .3   | 1.9  | 6.0  | 10.9 |
| 66    | 0.0  | 1.6  | 5.5  | 10.3 |
| 67    | 3    | 1.2  | 5.0  | 9.8  |
| 68    | 7    | .9   | 4.5  | 9.3  |
| 69    | -1.0 | .5   | 4.1  | 8.8  |
| 70    | -1.4 | .2   | 3.7  | 8.3  |
| 71    | -1.7 | 2    | 3.2  | 7.8  |
| 72    | -2.0 | 5    | 2.8  | 7.3  |
| 73    | -2.4 | 9    | 2.4  | 6.9  |
| 74    | -2.7 | -1.2 | 2.0  | 6.4  |
| 75    | -3.0 | -1.5 | 1.7  | 6.0  |
| 76    | -3.3 | -1.9 | 1.3  | 5.6  |
| 77    | -3.5 | -2.1 | .9   | 5.3  |
| 78    | -3.8 | -2.4 | .5   | 4.8  |
| 79    | -4.0 | -2.7 | .1   | 4.4  |
| 80    | -4.3 | -3.1 | 3    | 3.9  |
|       |      |      |      |      |

#### PROCEDURE FOR DETERMINING SERVICE AREA CONTOUR

1. Convert effective radiated power from watts to dBk using the formula:

$$P(dBk) = (10 \times log P(Watts)) - 30 \quad (B-1)$$

- 2. SUBTRACT this NEGATIVE number (in other words, convert it to positive and add) from 41 dBu.
- 3. In the look-up tables, determine the two height columns that correspond most closely with your H.A.A.T. (For example, if your H.A.A.T. is 300 feet, use the 200 and 500 columns.)
- 4. Interpolate between the listings under the two columns to determine where the figure arrived at in Step 2 falls.
- 5. Read the mileage at the extreme left-hand column of the row.

#### **EXAMPLE**

To determine the service area of a UHF base station with an ERP of 125 watts and an antenna height above average terrain of 400 feet:

$$P(dBk) = 10 \times log (125) - 30$$
  
 $P(dBk) = 21 - 30$   
 $P(dBk) = -9$ 

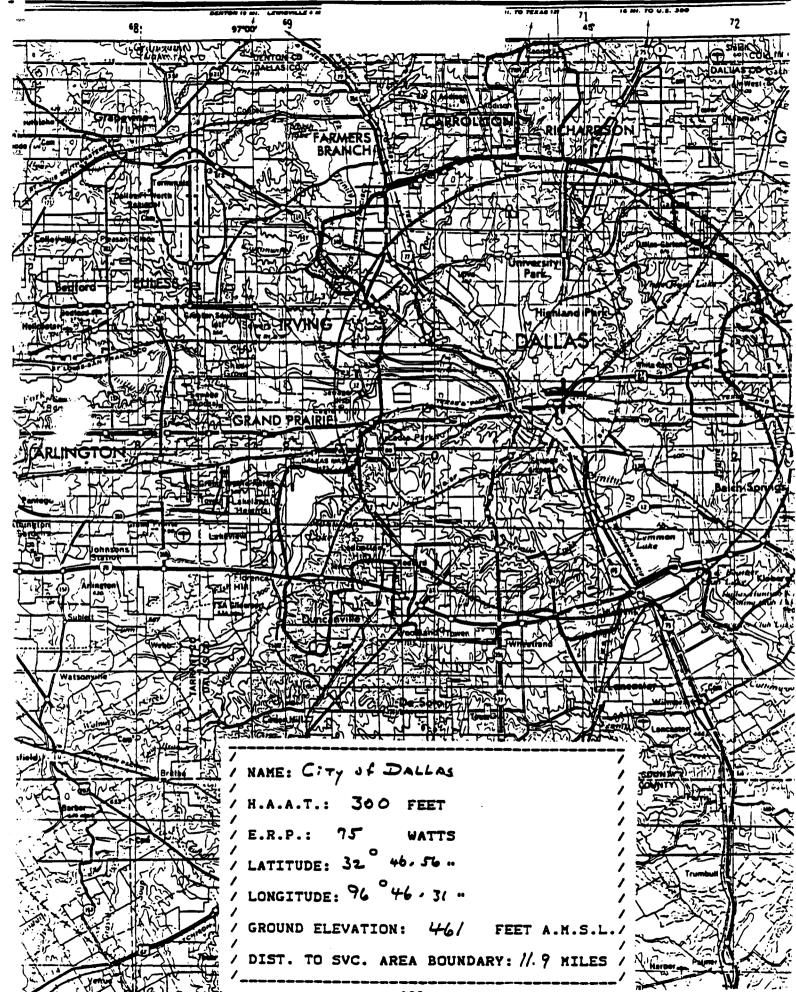
Subtracting:

$$F(dBu) = 41 - (-9)$$
  
 $F(dBu) = 50$ 

From the look-up table, 50 falls between 45.6 and 52.9 as 400 is interpolated between 200 and 500. Corresponding mileage is 12.

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#### CO-CHANNEL INTERFERENCE PROCEDURE

- 1. Determine distance from the proposed station to the existing station.
- 2. If not previously known, determine service area boundary of existing station. (Method is detailed in Appendix 13)
- 3. Find distance from proposed station to closest point of service area boundary of the existing station. (Subtract #2 from #1)
- 4. Based on mileage from 3 (above), ERP and HAAT of the proposed station, consult look-up tables for dBu level at the service area boundary of the existing station.
- 5. Subtract this dBu level from 41. If the result is greater than 25, the proposed system will conform with the interference parameters. If the result is less than 25, the proposed system must be redesigned by lowering power, antenna height, or both until the 25 dB protection ratio is met.

NOTE: If the terrain between the two systems would provide additional protection that would not be evident from using the normalized HAAT's, it will be permissible to calculate the HAAT of both existing and proposed sytems along the radial line directly connecting the two stations. The resulting service area boundary of the existing station and the dBu level of the proposed station at that point would then be used to calculate the protection ratio.

### **EXAMPLE**

Station A (proposed)

Station X (existing)

ERP: 100W (-10dBk)
HAAT: 500 feet, AMSL

200W (-7dBk) 200 feet, AMSL

Distance from A to X: 46 miles

Service Area

Boundary: 13 miles

11 miles

46 miles - 11 miles = 35 miles, distance from proposed to service area boundary of existing station.

From look-up tables, dBu level at 35 miles from a station with an ERP of 100 patts and HAAT of 500 feet is:

25.5 - 10 = 15.5 dBu

Subtracting this amount from the defined 41 dBu level at the service area boundary of the existing station gives 25.5 dB of protection, 0.5 dB more than the minimum we require.

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### SYSTEM ENGINEERING EXHIBIT

| Height Above Average          | Antenna Centerlinetft AGL |
|-------------------------------|---------------------------|
| Terraintft                    | Antenna Mfg:              |
|                               | Model:                    |
| IX                            | Gain:                     |
|                               | Orientation:T.N.          |
|                               | (Omni if non-directional) |
|                               |                           |
|                               | Transmission Line Type:   |
|                               | Length:ft.                |
|                               | Loss/100 ft:dB            |
| V                             | Total Loss:dB             |
|                               |                           |
| IX                            | . <i>A</i>                |
|                               |                           |
|                               |                           |
|                               | Transmit Output           |
|                               | Power:Watts               |
|                               | Cavities, Model:          |
|                               | Loss:dB                   |
|                               | Jumper Loss:dB            |
|                               |                           |
| Average Elevation:            | ft                        |
| Ground Elevation:             | ft                        |
| AUGURY PERFECTION ALBUARTS OF |                           |
| SYSTEM EFFECTIVE RADIATED PO  | WEK:WATTS                 |

. .

| Anderson 607 645 Bowie 612 650 Camp 618 656 Cass 626 664 Cherokee 622 660 Collin 632 670 708 746 784 814 Cooke 701 739 Dallas 606 608 610 612 614 616 618 620 644 646 648 650 652 Dallas 654 656 658 682 684 686 688 690 692 694 696 720 722 Dallas 724 726 728 730 732 734 758 760 762 764 766 768 770 Dallas 772 788 790 792 794 796 798 800 802 818 820 822 824 Delta 698 736 Denton 634 672 710 748 786 816 | County Pool  |
|---|--|
| Camp 618 656 Cass 626 664 Cherokee 622 660 Collin 632 670 708 746 784 814 Cooke 701 739 Dallas 606 608 610 612 614 616 618 620 644 646 648 650 652 Dallas 654 656 658 682 684 686 688 690 692 694 696 720 722 Dallas 724 726 728 730 732 734 758 760 762 764 766 768 770 Dallas 772 788 790 792 794 796 798 800 802 818 820 822 824 Delta 698 736   |  |
| Cass 626 664 Cherokee 622 660 Collin 632 670 708 746 784 814 Cooke 701 739 Dallas 606 608 610 612 614 616 618 620 644 646 648 650 652 Dallas 654 656 658 682 684 686 688 690 692 694 696 720 722 Dallas 724 726 728 730 732 734 758 760 762 764 766 768 770 Dallas 772 788 790 792 794 796 798 800 802 818 820 822 824 Delta 698 736  |  |
| Cherokee 622 660 Collin 632 670 708 746 784 814 Cooke 701 739 Dallas 606 608 610 612 614 616 618 620 644 646 648 650 652 Dallas 654 656 658 682 684 686 688 690 692 694 696 720 722 Dallas 724 726 728 730 732 734 758 760 762 764 766 768 770 Dallas 772 788 790 792 794 796 798 800 802 818 820 822 824 Delta 698 736   |  |
| Cooke       701 739         Dallas       606 608 610 612 614 616 618 620 644 646 648 650 652         Dallas       654 656 658 682 684 686 688 690 692 694 696 720 722         Dallas       724 726 728 730 732 734 758 760 762 764 766 768 770         Dallas       772 788 790 792 794 796 798 800 802 818 820 822 824         Delta       698 736   |  |
| Dallas 606 608 610 612 614 616 618 620 644 646 648 650 652 Dallas 654 656 658 682 684 686 688 690 692 694 696 720 722 Dallas 724 726 728 730 732 734 758 760 762 764 766 768 770 Dallas 772 788 790 792 794 796 798 800 802 818 820 822 824 Delta 698 736   | Collin   |
| Dallas 654 656 658 682 684 686 688 690 692 694 696 720 722 Dallas 724 726 728 730 732 734 758 760 762 764 766 768 770 Dallas 772 788 790 792 794 796 798 800 802 818 820 822 824 Delta 698 736  |  |
| Dallas 724 726 728 730 732 734 758 760 762 764 766 768 770 Dallas 772 788 790 792 794 796 798 800 802 818 820 822 824 Delta 698 736   |  |
| Dallas 772 788 790 792 794 796 798 800 802 818 820 822 824<br>Delta 698 736   |  |
| Delta 698 736   |  |
|   |  |
|   | Denton   |
| Ellis 747 785 815   |  |
| Erath 617 655   |  |
| Fannin 629 667  |  |
| Franklin 614 652  |  |
| Grayson 699 737 775 895   |  |
| Gregg 608 646 684 722 760   |  |
| Harrison 632 670  |  |
| Henderson 699 737 ·   | Henderson  |
| Hood 611 649  |  |
| Hopkins 611 649   |  |
| Hunt 627 665  |  |
| Johnson 633 671 709   |  |
| Kaufman 623 661   |  |
| Lamar 622 660   |  |
| Marion 628 666 (  |  |
| Morris 624 662<br>Mutual 1 601  |  |
| Mutual 2 639  |  |
| Mutual 3 677  |  |
| Mutual 4 715  |  |
| Mutual 5 753  |  |
| Navarro , 631 669   |  |
| Palo Pinto 615 653  |  |
| Panola 708 746  | Panola   |
| Parker 609 647  | Parker   |
| Rains 609 647   |  |
| Red River 606 644   |  |
| Rockwall 625 663  |  |
| Rusk 610 648  |  |
| Smith 634 672 710 748 786 816   |  |
| Somervell 613 651   |  |
| Statewide 602 604 636 638 640 642 674 676 680 712 714 716   |  |
| Statewide 718 750 752 754 756 826 828<br>Tarrant 609 612 614 616 618 620 622 624 626 628  | and the second s |
| Tarrant 630 650 652 654 656 658 660 662 664 666   |  |
| Tarrant 668 688 690 692 694 696 698 700 702 704   |  |
| Tarrant 706 726 728 730 732 734 736 738 740 742   |  |
| Tarrant 744 774 776 778 780 782 804 806 808 810   |  |
| Tarrant 812 821 830   |  |
| Titus 620 658   |  |

### REQUENCY ASSIGNMENTS REGION 40 - REVISED JULY 5, 1990

| County Pool   | Channels As                              | signed   |
|---|--|--|
| Upshur<br>Van Zandt<br>Wise<br>Wood                     | 616 654<br>703 741<br>607 645<br>630 668 |  |
| To be assigne accordance wi Regional reus protection cr | d in<br>th the<br>e                      | 619 621 657 659 685 705 707 721<br>735 745 759 763 765 767 771 779<br>781 783 789 793 795 797 799 801<br>803 807 809 811 813 817 819 823 |
| Unassigned to statewide freat this time.                |  | 603 605 635 637 641 743 673 675<br>679 681 711 713 717 719 749 751<br>755 757 825 827 829  |

| CHANNEL |           |                |                                       |          |
|---------|-----------|----------------|---------------------------------------|----------|
| NUMBER  | FREQUENCY | COU            | NTY FREQUENCY P                       | OOLS     |
|         |           |                |                                       |          |
| 601     |           | MUTUAL AID 1   |                                       |          |
| 602     |           | STATEWIDE      |                                       |          |
| 603     | 866.0500  |                |                                       |          |
| 604     |           | STATEWIDE      |                                       |          |
| 605     | 866.0750  |                |                                       |          |
| 606     | 866.0875  |                | RED RIVER                             |          |
| 607     | 866.1000  |                | ANDERSON                              |          |
| 608     | 866.1125  |                | GREGG                                 |          |
| 609     | 866.1250  |                | RAINS                                 |          |
| 610     | 866.1375  |                | RUSK                                  |          |
| 611     | 866.1500  |                |                                       |          |
| 612     | 866.1625  |                | HOPKINS                               |          |
| 613     |           |                | BOWIE                                 |          |
|         | 866.1875  | SOMERVELL      | DD ANIZZ TN                           |          |
| 614     |           |                | FRANKLIN                              |          |
| 615     |           | PALO PINTO     | · · · · · · · · · · · · · · · · · · · |          |
| 616     | 866.2125  |                | UPSHUR                                |          |
| 617     | 866.2250  |                |                                       |          |
| 618     | 866.2375  |                | CAMP                                  |          |
| 619     |           | TO BE ASSIGNED |                                       |          |
| 620     | 866.2625  |                | TITUS                                 |          |
| 621     |           | TO BE ASSIGNED |                                       |          |
| 622     | 866.2875  |                | LAMAR                                 | CHEROKEE |
| 623     | 866.3000  |                |                                       |          |
| 624     | 866.3125  |                | MORRIS                                |          |
| 625     | 866.3250  |                |                                       |          |
| 626     | 866.3375  |                | CASS                                  |          |
| 627     | 866.3500  |                |                                       |          |
| 628     | 866.3625  |                | MARION                                |          |
| 629     | 866.3750  |                |                                       |          |
| 630     | 866.3875  |                | WOOD                                  |          |
| 631     | 866.4000  |                |                                       |          |
| 632     | 866.4125  | COLLIN         | HARRISON                              |          |
| 633     | 866.4250  |                |                                       |          |
| 634     | 866.4375  | DENTON         | SMITH                                 |          |
| 635     | 866.4500  | BLOCKED        |                                       |          |
| 636     | 866.4625  | STATEWIDE      |                                       |          |
| 637     | 866.4750  | BLOCKED        |                                       |          |
| 638     | 866.4875  | STATEWIDE      |                                       |          |
| 639     | 866.5125  | MUTUAL AID 2   |                                       |          |
| 640     | 866.5375  | STATEWIDE      |                                       |          |
| 641     | 866.5500  | BLOCKED        |                                       |          |
| 642     | 866.5625  | STATEWIDE      |                                       |          |
| 643     | 866.5750  |                |                                       |          |
| 644     | 866.5875  |                | RED RIVER                             |          |
| 645     | 866.6000  |                | ANDERSON                              |          |
| 646     | 866.6125  |                | GREGG                                 |          |
| 647     | 866.6250  |                | RAINS                                 |          |
| 648     | 866.6375  |                | RUSK                                  | •        |
| 649     | 866.6500  |                | HOPKINS                               |          |
| 650     | 866.6625  |                | BOWIE                                 |          |
| 651     |           | SOMERVELL      |                                       |          |
| 001     | 00010100  |                | <b>-</b>                              |          |

| CHANNEL    |           | REGION         | 40               |          |
|------------|-----------|----------------|------------------|----------|
| CHANNEL    | PDPOURNCY | COLU           | imy popolipiov r | 2001 6   |
| NUMBER     | · ·       |                | NTY FREQUENCY P  |          |
| 652        | 866.6875  |                | FRANKLIN         |          |
| 653        |           | PALO PINTO     | FRANKLIN         |          |
| 654        | 866.7125  |                | UPSHUR           |          |
| 655        | 866.7250  |                | UPSHUR           |          |
|            | 866.7375  |                | CAMP             |          |
| 656<br>657 |           | TO BE ASSIGNED | CAMP             |          |
| 658        | 866.7625  |                | TITUS            |          |
| 659        |           | TO BE ASSIGNED | 11105            |          |
| 660        | 866.7875  |                | LAMAR            | CHEROKEE |
| 661        | 866.8000  |                | LAMAR            | CHEROREE |
| 662        | 866.8125  | -              | MODDIC           |          |
|            |           | ROCKWALL       | MORRIS           |          |
| 663        |           |                | CACC             |          |
| 664        | 866.8375  |                | CASS             |          |
| 665        | 866.8500  |                | *******          |          |
| 666        | 866.8625  |                | MARION           |          |
| 667        | 866.8750  |                |                  |          |
| 668        | 866.8875  |                | WOOD             |          |
| 669        | 866.9000  |                |                  |          |
| 670        | 866.9125  |                | HARRISON         |          |
| 671        | 866.9250  |                |                  |          |
| 672        | 866.9375  |                | SMITH            |          |
| 673        | 866.9500  |                |                  |          |
| 674        |           | STATEWIDE      |                  |          |
| 675        | 866.9750  | BLOCKED        |                  |          |
| 676        | 866.9875  | STATEWIDE      |                  |          |
| 677        | 867.0125  | MUTUAL AID 3   |                  |          |
| 678        | 867.0375  | STATEWIDE      |                  |          |
| 679        | 867.0500  | BLOCKED        |                  |          |
| 680        | 867.0625  | STATEWIDE      |                  | •        |
| 681        | 867.0750  | BLOCKED        |                  |          |
| 682        | 867.0875  | DALLAS         |                  |          |
| 683        | 867.1000  | TO BE ASSIGNED |                  |          |
| 684        | 867.1125  |                | GREGG            |          |
| 685        |           | TO BE ASSIGNED |                  |          |
| 686        | 867.1375  |                |                  |          |
| 687        |           | TO BE ASSIGNED |                  |          |
| 688        | 867.1625  |                |                  |          |
| 689        |           | TO BE ASSIGNED |                  |          |
| 690        | 867.1875  |                |                  |          |
| 691        |           | TO BE ASSIGNED |                  |          |
| 692        | 867.2125  |                |                  |          |
| 693        |           | TO BE ASSIGNED |                  |          |
| 694        | 867.2375  |                |                  |          |
| 695        |           | TO BE ASSIGNED |                  |          |
| 696        | 867.2625  |                |                  | •        |
|            |           | TO BE ASSIGNED |                  |          |
| 697        |           |                | <b>ኮሮ፤</b> ሞል    |          |
| 698        | 867.2875  |                | DELTA            |          |
| 699        | 867.3000  |                | HENDERSON        |          |
| 700        | 867.3125  |                |                  |          |
| 701        | 867.3250  |                |                  |          |
| 702        | 867.3375  |                | I R              |          |

|         |           | REGION         | 40                  |
|---------|-----------|----------------|---------------------|
| CHANNEL |           |                |                     |
|         | FREQUENCY |                | NTY FREQUENCY POOLS |
|         |           |                |                     |
|         |           | VAN ZANDT      |                     |
| 704     | 867.3625  |                |                     |
| 705     |           | TO BE ASSIGNED |                     |
| 706     | 867.3875  |                |                     |
| 707     |           | TO BE ASSIGNED |                     |
| 708     | 867.4125  |                | PANOLA              |
| 709     | 867.4250  |                |                     |
| 710     | 867.4375  |                | SMITH               |
| 711     | 867.4500  |                |                     |
| 712     |           | STATEWIDE      |                     |
|         | 867.4750  |                |                     |
|         |           | STATEWIDE      |                     |
| 715     |           | MUTUAL AID 4   |                     |
| 716     |           | STATEWIDE      |                     |
| 717     | 867.5500  |                |                     |
| 718     |           | STATEWIDE      |                     |
|         | 867.5750  |                |                     |
| 720     | 867.5875  |                |                     |
|         |           | TO BE ASSIGNED |                     |
|         | 867.6125  |                | GREGG               |
|         |           | TO BE ASSIGNED |                     |
|         | 867.6375  |                |                     |
|         |           | TO BE ASSIGNED |                     |
|         | 867.6625  |                |                     |
| 727     |           | TO BE ASSIGNED |                     |
|         | 867.6875  |                |                     |
| 729     |           | TO BE ASSIGNED |                     |
| 730     |           |                |                     |
|         |           | TO BE ASSIGNED |                     |
| 732     |           |                |                     |
|         |           | TO BE ASSIGNED |                     |
|         | 867.7625  |                |                     |
|         |           | TO BE ASSIGNED |                     |
| 736     | 867.7875  | TARRANT        | DELTA               |
| 737     | 867.8000  |                | HENDERSON           |
| 738     | 867.8125  |                | •                   |
| 739     | 867.8250  |                |                     |
| 740     | 867.8375  |                |                     |
| 741     |           | VAN ZANDT      |                     |
| 742     | 867.8625  |                |                     |
| 743     |           | TO BE ASSIGNED |                     |
| 744     | 867.8875  | TARRANT        |                     |
| 745     | 867.9000  | TO BE ASSIGNED |                     |
| 746     | 867.9125  | COLLIN         | PANOLA              |
| 747     | 867.9250  | ELLIS          |                     |
| 748     | 867.9375  | DENTON         | SMITH               |
| 749     | 867.9500  | BLOCKED        |                     |
| 750     |           | STATEWIDE      |                     |
| 751     | 867.9750  |                |                     |
| 752     |           | STATEWIDE      |                     |
| 753     |           | MUTUAL AID 5   |                     |
|         |           |                |                     |

| CHANNEL |           |   |                     |
|---------|-----------|---|---------------------|
| NUMBER  | FREQUENCY | COU                                     | NTY FREQUENCY POOLS |
| ======  | ========  | ======================================= |                     |
| 754     | 868.0375  | STATEWIDE                               |                     |
| 755     | 868.0500  | BLOCKED                                 |                     |
| 756     | 868.0625  | STATEWIDE                               |                     |
| 757     | 868.0750  | BLOCKED                                 |                     |
| 758     | 868.0875  | DALLAS                                  |                     |
| 759     | 868.1000  | TO BE ASSIGNED                          |                     |
| 760     | 868.1125  | DALLAS                                  | GREGG               |
| 761     | 868.1250  | TO BE ASSIGNED                          |                     |
| 762     | 868.1375  | DALLAS                                  |                     |
| 763     | 868.1500  | TO BE ASSIGNED                          |                     |
| 764     | 868.1625  | DALLAS                                  |                     |
| 765     | 868.1750  | TO BE ASSIGNED                          |                     |
| 766     | 868.1875  | DALLAS                                  |                     |
| 767     | 868.2000  | TO BE ASSIGNED                          |                     |
| 768     | 868.2125  |   |                     |
| 769     |           | TO BE ASSIGNED                          |                     |
| 770     | 868.2375  |   |                     |
| 771     |           | TO BE ASSIGNED                          |                     |
| 772     | 868.2625  |   |                     |
| 773     |           | TO BE ASSIGNED                          |                     |
| 774     | 868.2875  |   |                     |
| 775     | 868.3000  |   |                     |
| 776     |           |   |                     |
| 777     |           | TO BE ASSIGNED                          |                     |
| 778     | 868.3375  |   |                     |
| 779     |           | TO BE ASSIGNED                          |                     |
| 780     | 868.3625  |   |                     |
| 781     |           | TO BE ASSIGNED                          |                     |
| 782     | 868.3875  |   |                     |
| 783     |           | TO BE ASSIGNED                          |                     |
|         | 868.4125  |   |                     |
| 785     | 868.4250  |   |                     |
| 786     |           | DENTON                                  | SMITH               |
| 787     |           | TO BE ASSIGNED                          | SHIII               |
| 788·    | 868.4625  |   |                     |
| 789     |           | TO BE ASSIGNED                          |                     |
| 790     | 868.4875  |   |                     |
| 791     |           | TO BE ASSIGNED                          |                     |
| 792     | 868.5125  |   |                     |
|         |           | TO BE ASSIGNED                          |                     |
| 793     |           |   |                     |
| 794     | 868.5375  |   |                     |
| 795     | -         | TO BE ASSIGNED                          |                     |
| 796     | 868.5625  |   |                     |
| 797     |           | TO BE ASSIGNED                          |                     |
| 798     | 868.5875  |   |                     |
| 799     |           | TO BE ASSIGNED                          |                     |
| 800     | 868.6125  |   |                     |
| 801     |           | TO BE ASSIGNED                          |                     |
| 802     | 868.6375  |   |                     |
| 803     |           | TO BE ASSIGNED                          |                     |
| 804     | 868.6625  |   | 22                  |
|         |           | 17                                      | 20                  |

### APPENDIX 17 (continued)

# FREQUENCY ASSIGNMENTS REGION 40 - Revised July 5, 1990

| Channel | Frequency | County Pool    | Assignment           |
|---------|-----------|----------------|----------------------|
| 805     | 868.6750  | GRAYSON        |                      |
| 806     | 868.6875  | TARRANT        |                      |
| 807     | 868.7000  | TO BE ASSIGNED |                      |
| 808     | 868.7125  | TARRANT        |                      |
| 809     | 868.7250  | TO BE ASSIGNED |                      |
| 810     | 868.7375  | TARRANT        |                      |
| 811     | 868.7500  | TO BE ASSIGNED |                      |
| 812     | 868.7625  | DALLAS-TARRANT | Grand Prairie        |
| 813     | 868.7750  | TO BE ASSIGNED |                      |
| 814     | 868.7875  | COLLIN         |                      |
| 815     | 868.8000  | ELLIS          |                      |
| 816     | 868.8125  | DENTON-SMITH   |                      |
| 817     | 868.8250  | TO BE ASSIGNED |                      |
| 818     | 868.8375  | DALLAS         |                      |
| 819     | 868.8500  | TO BE ASSIGNED |                      |
| 820     | 868.8625  | DALLAS         |                      |
| 821     | 868.8750  | TARRANT        | North Richland Hills |
| 822     | 868.8875  | DALLAS         | Mesquite             |
| 823     | 868.9000  | TO BE ASSIGNED | •                    |
| 824     | 868.9125  | DALLAS ·       | Irving               |
| 825     | 868.9250  | BLOCKED        |                      |
| 826     | 868.9375  | STATEWIDE      |                      |
| 827     | 868.9500  | BLOCKED        |                      |
| 828     | 868.9625  | STATEWIDE      |                      |
| 829     | 868.9750  | BLOCKED        |                      |
| 830     | 868.9875  | TARRANT        |                      |

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